

The essential guide for all Atari computer users

Issue 9

JANUARY 1996

£3.25

ATARI World

HARD DRIVES

Huge step-by-step guide to using a hard disk

COMMUNICATIONS

Our massive 13 page feature unlocks comms for everyone

GRAPHICS CARDS

Have they come of age?

CONTROL YOUR PRINTER

Our basic tutorial shows you how

Reviews

● Mutant Penguins ● Power Drive Rally ● Fever Pitch
● Platon ● Killing Impact ● CKBD ● Junior Office ● CoSta



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<http://exclusiveworld.com/Atari/last/>

System Solutions

Company of the Year 1994

A page full of new products and more to come in 1996

MagiC 4

"If you want a multitasking system that works simply and reliably, then MagiC is for you."

ST Review, June 1994.

MagiC 4 is a complete TOS replacement (No more TOS upgrades required!). Fully pre-emptive with very fast disk filing, faster MIDI and faster printing routines it is actually accelerating your programs. MagiC 4 comes with truly exciting new features and a completely revamped MagiC Desk.

Some of the new features are ...

- ★ Now runs on the Falcon 030
- ★ Drag & Drop (pipes)
- ★ IDE hard disk & DSP support
- ★ Additional file systems and device drivers can be loaded
- ★ Accelerated and completely re-entrant filing system with background DMA (requires HD-Driver 4.5) i.e. you can now format or copy a floppy whilst using other programs.
- ★ Writeback Daemon
- ★ Built-in routines for 3D-Look and Colour Icons
- ★ New file selector
- ★ Symbolic Links (Aliases for files)

New MagiC Desk features:

- ★ New powerful 3D look Desktop with low memory requirement,
- ★ Copy and format in the background without locking of running programs or the desktop.
- ★ Kobold support
- ★ Parallel searching with comprehensive filters
- ★ 100 colour icons
- ★ Auto locator in the Desktop and file selector
- ★ Powerful font selector for text display
- ★ Background tiling and much more....

MagiC 4 for ST/TT/Falcon £69.95
MagiC 4 and Kobold £99.95

Please call for upgrade prices.

NVDI 4

Incorporating the screen accelerator, GDOS, Speedo and TrueType font systems of the previous release, the new version NVDI 4 comes packed with lots of useful new features. Here is a short list:

- ★ Faster print routines for the parallel port
- ★ Powerful new font tool for installed and un-installed fonts to pre-view, test print, group fonts into families and to print a font listing
- ★ Print test page sizes and max. printable area
- ★ UNICODE: Pro font support (65000 unique characters per font)
- ★ Support of Windows 95 fonts
- ★ Comes with 8 new fonts not previously supplied
- ★ More Colour printer drivers, Font quality test, NOVA-VDI support and more

NVDI 4 including 8 Speedo fonts £59.95
NVDI Postscript type 1 Font Module £24.95
100 TrueType font Pack 1 £39.95
100 TrueType font Pack 2 £39.95
500 TrueType font CD-ROM £49.95

Please call for NVDI special versions, upgrade options and prices.

NVDI 2.5 is still available for only £29.95

EASE 4

How to improve your ST desktop? Take Ease 4 features (right click to double click, auto window sizing to fit contents, text and icon windows, superb colour icon editor, auto sizing RAM disk, CORRECT file checking and repair program); add new features such as the Memo Icon - to leave those important reminders on your desktop; a new File Tree Pop-Up to get through deeply nested directories fast and without opening countless windows, and more features (too many to list). Add a revised manual and you get Ease 4. Definitely a vast improvement over the original desktop.

Ease 4 - desktop replacement software £49.95
or bundle it with MagiC 4 for only £99.95
or bundle it with NVDI 4 for only £89.95

CD ROMs



Our CD ROM Systems are special

- ★ Multi-session Drive ★ Photo CD compatible
- ★ Quad Speed ★ No caddies ★ Plays Music CD
- ★ Dual SCSI port ★ Headphone socket with Volume control ★ Stereo Phono connectors

New ExtenDOS Pro 2.2

The Toshiba 4X speed drive comes complete with ExtenDOS Pro 2.2. New features include:

- ★ Direct SCSI transfer of Audio Tracks - drag samples from music CD's without sampling
- ★ Advanced Audio CD Player with Record track to hard disk feature
- ★ Comprehensive user friendly install program

FREE Mega Archive CD with every drive

4X Speed CD ROM system inc. ExtenDOS Pro for the Falcon with SCSI II Cable, or TT £269.95
for the ST(FM/e) with the ICD Link II £319.95

ExtenDOS Pro 2.2 software only £39.95

SCSI Drives



Best Hard Drive 1994
ST Review Xmas '94
MiniS hard drives are full SCSI systems, hardware compatible with all Atari, Amiga, Mac and PC computers. They are unrivalled in size, low noise, speed and style. The ST(FM/e) version now comes with the ICD Link II as standard, or choose the Translator with HD Driver. Also included are terminators and all required cables.

We will match prices but won't compromise quality
Gold Award of 93% - ST Format Feb. '94

Essential Buy of 92% - ST Review Christmas '93

- ★ Quiet fan ★ Internal Power Supply 100-240V
- ★ 2 Year Warranty ★ Small (2.5x6x8.5") (WxHxD)
- ★ Dual SCSI Port ★ Device Number Switch

		TT/Falcon	ST(FM/e)
80Mb	IBM	£139.00	£189.00
127Mb	Quantum	£199.00	£249.00
270Mb	Quantum	£219.00	£269.00
540Mb	Quantum	£279.00	£329.00
850Mb	Quantum	£309.00	£359.00
1Gb	Connor	£349.00	£399.00
2Gb	Connor	£759.00	VAT Included!

SyQuest EZ Drives

The new Syquest EZ 135 drive is available now. Use it as your first drive or as a fast backup system. Peace-of-mind two year warranty on the drive and five years on the cartridges.

EZ135 Inc one cartridge £219.00
Extra cartridge £17.95
Three cartridge pack £49.00
Five cartridge pack £79.00

HD Driver 4.5

The fastest Hard Disk Driver software just got better. Now you can write-protect individual boot/root sectors, change the boot sequence if you have more than 1 drive, and most importantly can multitask Hard Disk access under MagiC 4. On the Falcon partition sizes of 1Gb are supported.

HD Driver 4.5 £29.95

MAIL ORDER,
Fax: (01753) 830344
Windsor Business Centre, Vansittart Rd, Windsor. SL4 1SE

(01753) 832212

SHOWROOM,
Fax: (0181) 693-6936
17-19 Blackwater Street, East Dulwich, London. SE22 8RS

(0181) 693-3355

Prices include VAT and may change without notice - UK P&P £3.95 - Multiple or large items, add £10 courier. E&OE

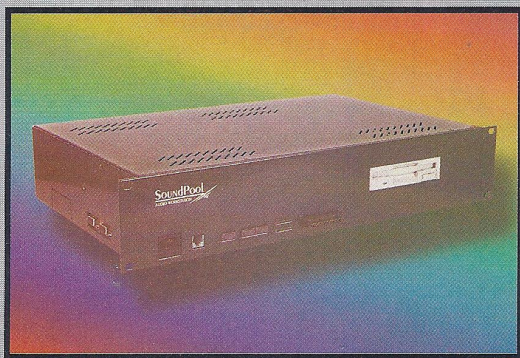
With two service centres and Atari trained engineers at your service, the Atari Workshop is now Atari UK's preferred and recommended service agent. Need it back in a hurry? Ask for our next day ProService. Call us for estimates and to discuss your upgrade requirements. We fit all quality upgrade products. Ask for our Courier collection and delivery.

Call Windsor on (01753) 818816, or London on (0181) 693-1919.

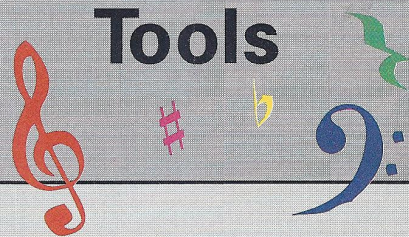
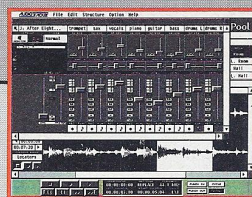
ATARI

WORKSHOP

SoundPool Pro Audio Tools



The SoundPool Audio Workstation has been designed for professional studio use. The 19" 2U Rack integrates the Falcon030 computer, Hard Disks, DAT I/F & extra MIDI outputs.



Audio Tracker

8 Track Hard Disk Recording Software.

A 4, 6 or 8 track digital recording system with built-in mixer and digital effects processor designed to meet demanding real-life studio situations. Audio Tracker generates and synchronises to MIDI Time Code and allows MIDI remote control. Well suited for professional video post production and an ideal companion for Cubase and Notator. Price £159.00



Falcon CDR Software

Press your own Audio CD's on the Falcon 030. The software manages audio files (AIFF, AVR and WAV) to create 'Red Book' compatible CD's. Features include PQ Editing, Selectable Pre-Emphasis, Copy Protection for each track and more. Available from only £159.00. Ask for complete CDR systems.

Realtime FFT Analyser and Peakmeter

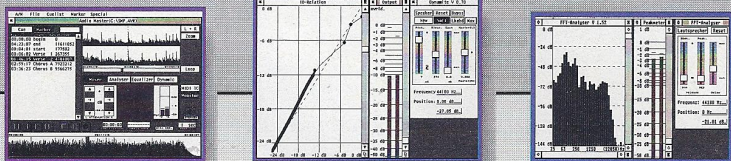
Precision measuring software for frequencies from 5Hz to 48KHz with linear, logarithmic, 3rd band and 'Sonogram' modes. Can be used with AudioMaster or as a stand alone program. Price £199.00

Dynamite - The Dynamics processor

The freely adjustable I/O curve allows the software to work as a compressor, expander, limiter or noisegate simultaneously at different level ranges. Can be integrated into AudioMaster. Price £199.00

ADAT Interface

The missing link to ADAT 8-track recorders, FX units, synthesizers, samplers and mixers. The Falcon can now record up to eight tracks simultaneously. £495.00



Audio Master

Stereo Digital cutting and pre-mastering Software for musicians, producers and sound engineers who want to get the best results from their recordings. Scrubbing, non-destructive editing, markers on the fly, bar editing, crossfades in realtime and more. Audio Master can be expanded into a complete audio mastering workstation with optional DSP software modules (6 parametric equalizer, Compressor / Limiter / Gate, Analyser) eliminating the need for costly U-matic pre-mastering facilities. Price £229.00



FDI - DAT interface

The vital link to DAT recorders, CD players and the exciting Yamaha ProMix 1. Compatible with Cubase Audio and Notator Logic. £229.00



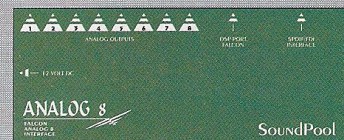
Four extra MIDI outputs

64 additional MIDI channels compatible with Cubase and all Atari Computers. Comes with M.ROS driver. £149.00



Analog 8/4 Interface

FA4 £199.00
FA8 £349.00



4 or 8 high quality 16 bit Digital to Analogue converters with linear frequency response from 20Hz to 20kHz and line level output to meet professional recording standards.

All prices include VAT

To order and for more information
or FAX 0181 693 6936

Tel: 0181 693 3355

☐ I am interested in the Audio Workstation ☐ Please send further information ☐ I own a Falcon please send the demodisk

Name: _____ Telephone: _____

Address: _____ Postcode: _____

Post to: System Solutions
17-19 Blackwater Street,
London. SE22 8RS

System Solutions

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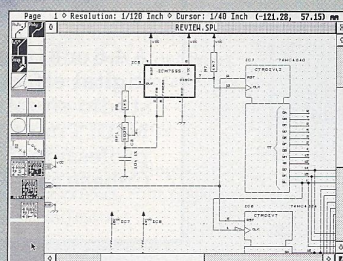
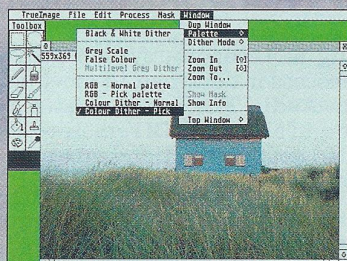
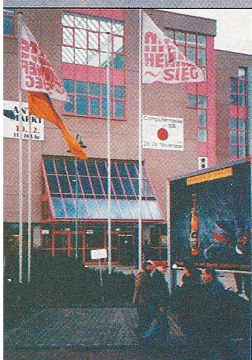


A quality exxos scan 01/05/98

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http://exxos.www.idnet.com/IMPULSE/atari/last/

contents



FEATURES

12 ProTOS

The latest German Atari Show – bigger than expected

19 Ports

Solve your cartridge port nightmares

28 Word Processing

Protext and Papyrus – what's the difference?

40 Impro

Final part of our image processing series

30 Graphics Cards

Are they for you?

REVIEWS

JAGUAR

20 Mutant Penguins

Whacky or what?



21 Power Drive Rally

Another new Jag game

35 Fever Pitch Soccer

The ultimate soccer game for the Jag?

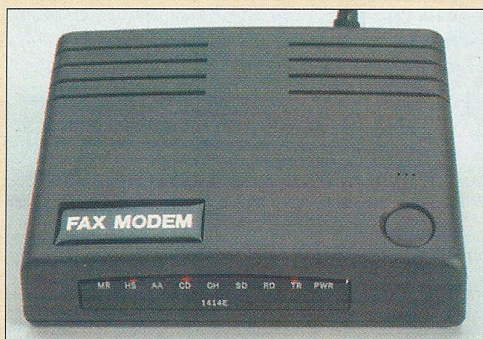


37 Killing Impact

Remember Joust? A cracking new game for Falcon owners

38 Platon

Circuit design – is this the ultimate solution?



Communicating
with Atari

STSource

43 Communication for Dummies

Atari World's massive 13 page feature covering Bulletin Boards, Faxing from your Atari and how to get started and progress in the world of the Internet. Guaranteed to become a regular reference section for all modem users

REGULARS

6 News

All the latest as it breaks

8 Reader Disk

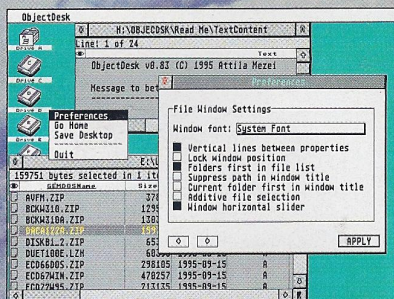
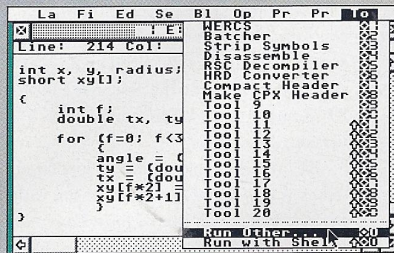
Loads of Internetabilia and more on this months Disk

10 Letters

A right old grump gets his say. And you get yours too.

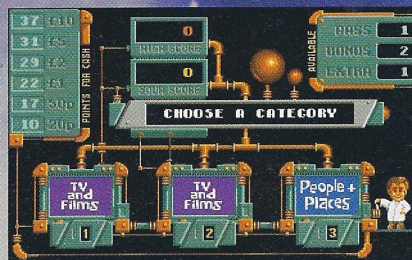
25 Basic Tutorial

Ofir Gal continues his HiSoft Basic tutorial



81 PD Arena

The best PD pages you'll ever see, masterminded by the PD-atrician Joe Connor.



88 PD Arena Games

Nial Grimes opens his presents and shares them with you...

91 STranded

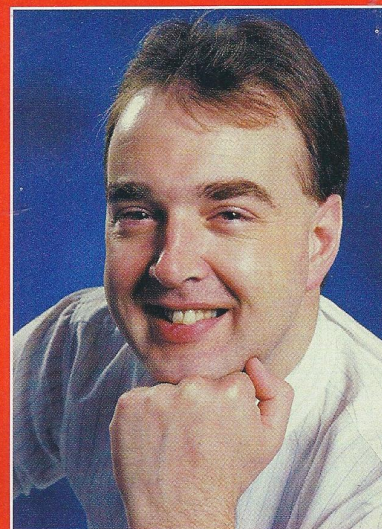
Neil Pool is on the desert island with a lot of llamas

92 Never mind the language

Programming theory with professor Jon Ellis.

93 Q and A

Your questions answered by our technical team.



DEVELOPMENT CRAZY

The Atari scene was dead years ago was it? Well can someone then please explain what's going on! Inside this issue you will see new developments for Atari computers continuing at an astonishing pace.

New games developments for ST & Falcon, news of new releases of leading products including Papyrus & NVDI, new hardware developments including graphics cards for the ST and accelerators for the ST & Falcon to name but a few. If the Atari scene is dead, someone should have told the Atarians. Meanwhile I can't wait to feature all these new products in Atari World during 1996.

Andrew Wright

Andrew Wright,
Editor

Don't miss the
February issue on
sale 19th January

Complete
Hard Drives
with

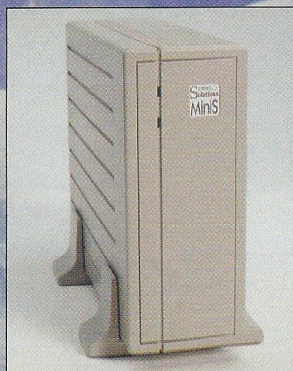
ATARI Pro

59 Hard Disks

The definitive guide

66 Inside Out

Paul Rossiter continues - this month it's memory



SNIPPETS

CD's galore

16/32 have a range of new CD's for the Atari. All things Falcon is an up to date CD of Falcon software and utilities for under £20. The NCS collection from Germany comprises 11 new 'themed' CDs including Raytracing, DTP, Graphics, Text, Business, Communications and Music. Prices are yet to be announced but believed to be under £15. Product launch is planned for the Atari World Christmas Show.

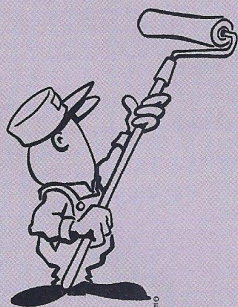
Also at the Atari World show should be a new CD of clip art featuring 6,000 bit map graphics in .CVG format and 1,000 vector graphics in .GEM format. Again under £20 and with the bit map graphics at high quality 300dpi format this CD is worth looking into for any DTP user. Contact 16/32 on 01634 710788.

Late getting the Christmas spirit?

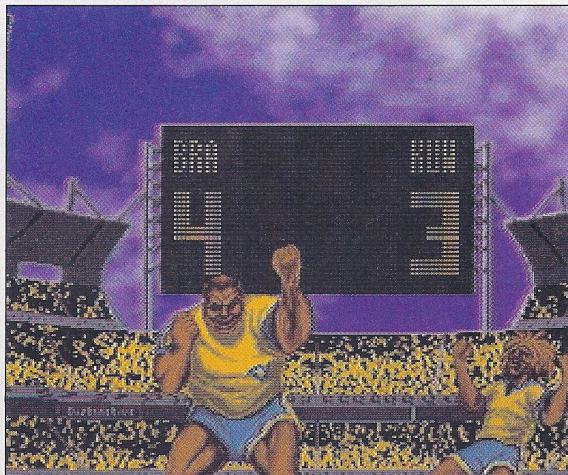
LAPD have a new 3 disk collection of Christmas related clip art at £4. Contact LAPD on 01773 761944.

GCSE in ST style.

Believe it or not the ST has all the power necessary to get a child through GCSE. Goodmans have proven the point by releasing a ten disk set of educational software targeted at GCSE students. Priced at £14.99 this collection proves that it is not only parents with £1500 to spend that can give their children the tools for a decent education - the ST can do it too! Contact Goodmans on 01782 335650.



NEWS

Games are dead -
long live Atari games!

Just when everyone was saying no new Atari games, this month sets the record straight - games for the ST Falcon and Jaguar are back with a vengeance! Despite rumours to the contrary Unique Developments are still developing for the Atari platform - next in their line up is the long awaited Obsession for the Falcon to be demonstrated at the Atari World Christmas show and on sale in January.

Not to be outdone, Atari themselves are launching Jaguar games at a pace along with a major marketing push on the Jaguar for Christmas. Expect to see new titles including Fever Pitch Soccer (the only 64-bit version of this much vaunted soccer action game) plus the highly acclaimed Attack of the Mutant Penguins in the shops before Christmas. And if you have strayed

from the Atari brand and own a 16-bit console try your local Future Zone - they will trade it in as part payment for a new Jaguar.

Games developers get a shot in the arm too with Goodmans' new Extensions to STOS by Anthony Hoskins - another one who knows about catchy product titles. STOS is brought into the 90s with Falcon support. Featuring 27 new system controls, 32 new graphics extensions plus access to the DMA and Falcon audio system this has to be the essential Falcon STOS tool. At £1.99 for the unregistered version, it's a steal.

ST owners should not be disappointed either. A new footie management sim with the catchy German title of European Sunday League Association Manager or ESLA for short is now available. More than your normal options you are responsible for building the stadium and bribing the ref - as well as the normal management chores; or perhaps they are the normal jobs for a football manager! Available at £19.95 ESLA needs an ST, colour screen and is described as quote "strangely addictive" by the UK distributor.

And there is yet more for the Falcon games player! From Czechoslovakia and Germany comes Graven and Platonix to the light of day and Confusion - a puzzle game set at the time of the Egyptian Pharaohs no less - is available now. Confusion boasts 100 levels, needs an Atari Joypad, is hard disk loadable and costs £26.

Contacts:

Obsession and ESLA - Merlin on 01452 770133.

Jaguar, Attack of the Mutant Penguins and Fever Pitch Soccer - your local Future Zone store.

Confusion, Platonix and Graven - 16/32 on 01634 710788.

Extensions to STOS - Goodmans on 01782 335650.





System Solutions

No wonder Karl Brandt of Systems Solutions had a big smile on his face during the German ProTOS show - he seems to have signed up some great new ST products. Smiling Karl divulged details to *Atari World* of some of his new releases.

HD Driver, the hard disk driving software for all Atari computers has just undergone a dramatic revision. It now offers more features, more power and more compatibility. A new manual includes a general introduction to hard disks as well as an in-depth look at HD Driver and all its features which include:

- An all-in-one program that configures all aspects of HD Driver to suit your system.
- Better write protect options that enable you to write protect all partitions individually, as well as the root sectors and boot sectors of your disk.
- Special enhanced compatibility with ICD SCSI adapters to give better control over devices connected via the ACSII port and an ICD adapter.
- SCSI-2 hardware control to turn on and off the hardware caching and parity of suitable drives.
- SCSI Bus Arbitration enables you to connect more than one computer to the same hard disk. Some new drives require SCSI Bus Arbitration to work at all.



More CD ROM

Systems Solutions also has a new Cubase CD ROM. This disk is crammed full of mixer maps, songs, arrangements and everything else any Cubase oriented musician will be interested in. Holding over 600 megabytes of data it covers every style of music and type of file you could ever want. Need inspiration for your toon's? Want to make music makin' easy? Fancy owning a resource which will give you years of use? Then the Cubase CD ROM might well be for you.

● Enhanced drive assignment which gives you complete control over the order in which devices are seen (and thus drive identifiers are allocated) - controlled via a simple drag-the-drives interface.

● Better control over removable disk devices (including the Iomega ZIP and the Syquest EZ Drive).

It still will not format a hard disk though - perhaps the authors should attend to the needs of ordinary ST owners too!

The price is £29.95 inclusive of VAT.



Score Less

System Solutions has announced the availability, once again, of Cubase v3. Due to customer demand System Solutions has made a special deal with Steinberg to stock Cubase v3 for the astounding price of £249 inc VAT. The main difference between this and its big brother Cubase Score (available for £339) is the lack of a score module.

They are also planning Cubase v3 bundles which will give even more savings - bundles will include monitors and even entire systems.

SNIPPETS

Copy those disks!

Systems Solutions are rumoured to be launching a new copy program for floppy disks. Priced at under £50 E-copy promises to do more than any other software for disk copying. It had better be something special at 'under £50' to compete with TOS! Ask System Solutions what it is all about on 0181 683 1919.

Get in Sync!

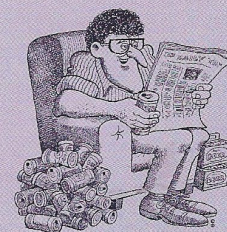
Rumours that the Amiga is back are true. And what's more those guys have brought up Microvitec's production of monitors until well into next year. The good news is that Ladbroke Computing will sell you an Amiga multisync monitor ready for use on your Atari. For those of you who don't know, the Microvitec will run in all ST and Falcon modes. What's new is the Amiga monitor features built in stereo speakers. At £309.99 it's a dream purchase that solves the monitor problem for all ST and Falcon owners. Contact Ladbroke on 01772 203166.

High speed TUS.

TUS Developments has launch its new modem package targeted at ST owners. Complete with 4 disks of ST software including the excellent Junior Office fax software from Cyber STRider, this could be the modem that gets you communicating this Christmas. Contact TUS on 01625 503448.

Show crazy!

Apart from the German ProTOS show, this month sees show time gone crazy. As well as the Atari World Christmas shows there are shows in the US, Paris and Poland - yes even the Poles use STs. More news on what happens to follow next month.



Reader Disk

Credit card
order hotline:
01487 773543

A cover disk increases the price of a mag yet many readers never even look at the software! There has to be a better solution – the Reader Disk...

The optional Reader Disk directly supports the software covered in the magazine and creates a link between the reader and the software author. Atari World supports and encourages authors – in return you can do your bit by supporting them. The Atari World team is in constant contact with the best Atari programmers around – we keep your finger on the pulse and obtain the very latest versions, often exclusive to Atari World!

A single Reader Disk costs £2.50 inclusive of post and packing - around the same price as a typical PD disk. Some issues offer two or more Reader Disks with each additional disk costing £1. For example, an issue with two disks would cost £3.50 inclusive of post and packing. So the choice is yours but don't forget subscribers get all additional disks absolutely free! Check out the special subscriber deals on pages 14 and 15.

What's on the disk?

Internet Access Pack

The internet access pack includes components programmed by three different authors, each on a different continent!

STiK

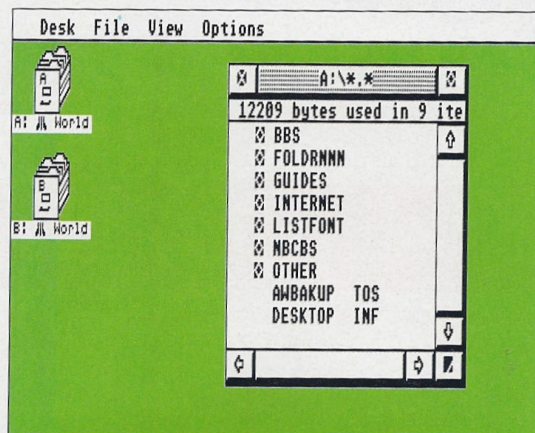
Freeware/Steve Adams

This desktop accessory establishes your connection with your Internet service provider. This will only work if you have an full Internet account.

Crystal Atari Browser (CAB)

Freeware/Alexander Claus

CAB is designed to read HTML documents which is the format used to display world wide web (WWW) pages. Any HTML document such as ST Applications or the Falcon FacTT File disk magazines can be browsed off-line. CAB can browse WWW pages on-line using the OVL file...



CAB OVL file

Freeware/Tim Newsome

This small file is the Internet module which enables CAB and STiK to work together and browse WWW pages on-line. If you're browsing off-line rename this file, for example from CAB.OVL to CAB.OVX to disable it.

IRC.TOS

Freeware/Steve Adams

Internet Relay Chat (IRC) is an excellent place to chat with other Atarians all over the world in real time. There's always someone to talk to in the Atari area but you'll need a full Internet account to use this.

Teddy-TERM v2.14

Mark Matts

Teddy-TERM is one of the easiest comms programs to set up and use which makes it deal for beginners. With any Atari, a modem and a phone line you can log onto any BBS anywhere in the world. Add an off line reader (OLR) such as Kivi and you can conferencing with fellow Atarians in minutes!

FOLDNRNN

Freeware/Atari

This tiny utility fixes the infamous 40 folder TOS bug. The program must be renamed and placed in the Auto folder of your boot disk before use.

NBCBS

Atari/Oliver Scheel

This simple cache program can dramatically speed up disk access. The program must be renamed and placed in the Auto folder of your boot disk before use.

Listfont v1.6

Freeware/Matthew Carey

This handy utility creates a list of every font and file name it can find in the selected path. TrueType, Calamus, Postscript Type 1, GDOS GEM, Bitstream Speedo and Ghostscript GSF formats are supported.

Reader Disk problems

In the unlikely event that a Reader Disk won't load or gives you any other problems, disconnect all peripherals, switch off your computer for at least 20 seconds and try again. If this doesn't solve the problem, return the disk to the Atari World Disk Sales address clearly labelled Atari World faulty disk and enclose a self addressed envelope. Your disk will be tested and replaced or returned as quickly as possible.

Should you require technical help, call the Atari World Disk helpline on Wednesday evening between 19.00 and 21.30pm on (01206) 852602 or leave a message on the answer phone outside these hours.

Atari World Profile

Exclusive/Joe Connor

Atari World's own database for issue eight in ST-Guide format. Added to the files included in previous issues the database now covers the first eight issues. You may prefer to create a separate database disk which can easily be extended each month, to do this: Use AWBAKUP.TOS to make a copy of the Reader disk.

On the copy delete everything apart from the GUIDES folder.

Each month copy the contents of the latest Reader disk GUIDES folder to the GUIDES folder on your database disk - some files will be overwritten each month, this is normal. Optionally add a copy of ST_GUIDE.ACC and ST_GUIDE.INF to create a stand alone database boot disk.

This months Reader disk is a communications software special. To make it easy to back up your Reader disks a copy of AWBAKUP.TOS, specially programmed by Ofir Gal, has been included. Simply run AWBAKUP.TOS and follow the on-screen instructions; the program even formats the disk for you. We recommend you always store your original disks in a safe place and don't use AWBAKUP.TOS for any other purpose.

SEE PAGES 68-69 FOR ORDERING INFORMATION AND BACK ISSUES

Quality and Service

At Floppyshop we only stock the very best software. All our ST disks are double sided and are crammed full! In addition, our catalogue disks are the most detailed in the UK and cost just £1.00. Please state ST or Falcon. Same day despatch on orders. Credit card orders are welcome (minimum value £2.00). Unless otherwise stated, all disks cost £2.00 each and run on a standard machine with 512k of memory (1 Meg if it's a Falcon) upwards. COLOUR OR MONO Disk numbers ending 'C' i.e. GAM.10C are for COLOUR MONITORS OR TV'S ONLY. Disk numbers ending 'M' eg: ART.63M are for MONO MONITORS ONLY. RGB or VGA Indicates the monitor type required for a specific Falcon program.

CLIP ART FOR DTP

CLIP114, CLIP115, CLIP116, CLIP3494 A collection of over 700 high quality images in GEM vector format. Only £2.00 per disk! S-CLIP5288, S-CLIP5289 & S-CLIP5290 COSTUME THROUGH THE AGES - A collection of 75 high quality 300 dpi scans in IMG format dating from the 12th Century to the present day. Three disk set, £5.25. S-CLIP5319, S-CLIP5320 & S-CLIP5321 GOOD HOUSEKEEPING - Almost 30 high quality 300 dpi scans in IMG format from 1920's editions of the magazine of the same name. Three disk set, £5.25. S-CLIP5322, S-CLIP5323 & S-CLIP5324 WW2 FOOD & GARDENS - Thirty high quality 400 dpi scans in IMG format from the War years. Three disk set, £5.25.

We also have hundreds of disks of quality MONO IMG clip art, all from £2 per disk or less! Order our catalogue at £1.00 for full details.

FONTS

FNT.3185, FNT.3186, FNT.3187, FNT.3188, FNT.3331, FNT.3332 - 102 PostScript Type 1 fonts for use with PageStream, SpeedoGDOS 5 etc. £2.00 per disk.

OxideWare Fonts - A collection of over 240 semi-professional Calamus fonts spread across 16 disks. Far superior quality to the usual PD Calamus fonts. Very highly recommended. Just £28 for the entire set!

We have over seventy more disks full of Signum, Calamus, Type 1, True Type and Degas fonts. Check out full catalogue for a listings.

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GAM.5122C COUNTER ATAK - A variation of the Tetris/Columbus theme where you must avoid counters of the same colour touching each other! Combine this reverse logic with a time limit and it's tough! GAM.5244C ATARI BINGO - Play for four corners, any line, cross card, circle card and full house. Needs 1 Mb. RACEPLU V2 - A unique multi-level board game where you buy goods, gamble and much more. Needs 1 Mb. GAM.5261C PLASMA BALL - Keep the ball in the air as long as possible, despite the lowering ceiling! WORLD LEAGUE SOCCER - A player/manager game. Work your way up from the lowest division to the top of the world league. Needs 1 Mb. GAM.5315C PARALLAX PAINTER - Collect the paintpot and paint all the squares! The only problem is that they are all on parallax levels, one wrong jump and you're into the black hole! Lots of powerups, bombs, dynamite etc. Needs 1 Mb.

MIDI & MUSIC

MID.3671 CLASSICAL MUSIC - 42 classical pieces in MIDI format. Includes pieces by Bach, Beethoven, Chopin, Handel, Mozart & Tchaikovsky. MID.5104M EXPLORER 32 - Shareware Editor/Librarian for Roland D-series synths. Formerly distributed by C-Lab. MIDI FILE PRINTER - Load a MIDI file and print out in the author's rather idiosyncratic form of notation. Requires GDOS. MID.5310C MIDIBAK - 42 drum and percussion styles in .MID format. Designed to be used as backing tracks. Classified under the following headings:- African, Dance, Jazz, Latin, Reggae, Rock and SoulFunk. Very high quality tracks. MID.5312C MONSTER PATCH - Shareware voices for Roland D-110 (or any other D series synth apart from D50, D70 and their variants). ST to MIDI CONVERTER - Converts chip music from games into 3-channel MIDI output.

PROGRAMMING

LAN.3545 GFA EXPERT - Includes Your Second GFA Basic Manual, a 122 page text file full of hints and tip on how to get the most out of GFA Basic. It covers many features of GFA Basic which are not mentioned in the manual. Also included is lots of useful source code for use in your own programs. DMG.5331C STEStoStereone Issue 1 - A new STOS programming diskmag. This issue gives information on all STE related EXTENSIONS, STOS blitter commands, DMA sound and demo coding. Lots more articles and tutorials. STE ONLY. DMG.5332C STEStoStereone Issue 2 - This issue gives away the full source to last month's Intro Demo Screen. The tutorials look at hardware scrolling, the Control EXTension and advanced blitter commands. There's also a feature on Ninja Tracker and Quarter Tracker and lots more. STE ONLY. LAN.5334. THE PROGRAMMERS INTRO TO DEMO TECHNIQUES - Comprehensive program which explains every aspect of demo coding. You will require a good working knowledge of 68000 assembler and Devpac 3 in order to make use of this disk. Needs 2 Mb.

UTILITIES

We have thousands of utility programs spread over several hundred disks. A full description of every program is given in our catalogue. UTL.167 B-STAT v2.48 - Latest version of the popular statistical analysis and graphing package. Performs almost every type of statistical computation, outputting to numerous types of graphs. Needs 1 Mb and GDOS (for graphing & printing). UTL.4143 AWARD MAKER PLUS - Design your own certificates! Over 250 designs on disk which can be adapted to suit. UTL.4657 XLATOR V2.04 - An excellent foreign language translation program with a 27,000 word German to English dictionary. Also includes a small French to English dictionary/Full registered version. Needs 1 Meg. UTL.5058 LOTTERY COMPANION 3 - Britain's favourite National Lottery analysis and forecasting program has been updated yet again. THE NATIONAL LOTTERY V3 - For those of you who run syndicates, you can't beat this one! UTL.5102 THINKING V0.59 - One of the most fully featured replacement Desktops around. Has all the best features of TOS 2+ and a few extras from System 7, Windows 95 and NeoDesk 4. Needs TOS 1.4 or better.

UTL.5227 DRUG GLOSSARY - Database of over 2200 generic and brand-named drugs, together with a range of vitamins, minerals and other preparations often used as drugs. AL'S VIRTUAL FILE MANAGER - Program launcher with lots of extras. DA CAPO - Highly graphic oriented database where presentation and ease of use combine with sheer power. Supports print out to all printer types.

UTL.5341 PACK-CDK - Combines CDK and all associated fonts into a single directory or archive. PINATUBO - Universal driver for a number of EPROM programmers. ZCONTROL - A powerful alternative to XControl with lots of extras. Only runs under Multi-TOS, Geneva or MagiC.

Other Products Available

DegasArt Parts 1, 2 & 3

The highly acclaimed three disk graphics tutorial package has been upgraded to v3. Well written, easy to follow tutorials combine with 120 quality illustrations giving you a step by step guide to creating your own masterpieces on your ST. As well as delving into every significant feature of Degas Elite, DegasArt takes you through the basics of reproducing artwork on a computer and guides you through the 'tricks of the trade'. As most of the tutorials discuss general graphic techniques, these can be equally well put into practice with EZ Art Professional, True Paint, Pixart, Canvas, Deluxe Paint, Fair Paint, Cyber Paint or indeed any other ST graphics package, including the vast range of titles available in the Public Domain. If you want to learn to draw and paint on your ST (or improve your existing skills), DegasArt 3 simply cannot be beaten. DegasArt 1, 2 & 3 come together as a three disk set for the incredibly low price of just £12.00 + P&P (UK free, Europe £15.50, rest of world £3.00). Existing users of DegasArt parts 1 & 2 can order part 3 on its own for just £5.00 + P&P (UK free, Europe £1.00, rest of world £2.00).

Easy Stitch

Easy Stitch is a cross stitch pattern generator. It lets you to convert graphic files into cross stitch patterns or create your own on a grid on screen. This computer based variation stands head and shoulders above the traditional graph paper method as it allows blocks of stitches to be copied, rotated, enlarged or reduced to suit. In fact you can even edit the individual stitches. Patterns up to 10 feet by 8 feet can be created easily on your ST and printout is supported to most common dot matrix and laser printer types. Easy Stitch is the leader in its field, being the only cross stitch package to support the creation of the more complicated back stitch and half stitch. An ideal Christmas present, especially at the low price of just £19.95 + P&P (UK free, Europe £1.50, rest of world £3.00).

Easy Text Pro Vector

At last, quality Desktop Publishing is within everyone's grasp with the highly polished, yet budget priced Easy Text Pro Vector. Create your own leaflets, brochures, newsletters and business stationery easily with this well documented, easy to use package. This version makes full use of the increased flexibility offered by SpeedoGDOS and NVDI 3, giving crisp, clear output on all types of printer. Now available at the 'silly' price of just £19.95 + P&P (UK free, Europe £2.00, rest of world £5.00). Can you really afford to be without this product? Easy Text Pro Vector needs 2 Mb of memory and a hard drive or 2.5 Mb if you don't have a hard drive. SpeedoGDOS 4 (or later) or NVDI 3 are also required.

Easy Text Pro

This is Easy Text Pro Vector's 'little brother' with most of the functionality of Pro Vector but tailor made for users who do not have SpeedoGDOS or NVDI 3, and are short of memory. It runs on a basic 1 Mb ST and does not require a hard drive (although we do recommend that you have one). Easy Text Pro is also available for just £19.95 + P&P (UK free, Europe £2.00, rest of world £5.00).

OMEn Multi-Tasking Operating System

Designed as a cross platform operating system, programs written for OMEn on the Atari will run without modification on a PC, Mac or Amiga running OMEn. OMEn completely replaces TOS and GEM, providing fast, compact (in terms of memory usage) true pre-emptive multi-tasking OS. This full version offers lots of extras over the Shareware version and is only available from Floppyshop in the UK. The OMEn operating system costs £20.00 + P&P (UK free, Europe £2.00, rest of world £4.00). Please note that OMEn does not run TOS or GEM programs directly, although their source code is easily adapted if you have the OMEn Developers Kit.

OMEn Developers Kit

The full developers' kit including the massive programmers' reference guide on disk. The two disk package includes an assembler, disassembler/debugger, and a C startup and interface library (you can create your code in any ST C compiler). The OMEn Developers Kit has deliberately been priced low, so as to bring aspiring new programmers into the fold. The OMEn Developers Kit costs £12.00 + P&P (UK free, Europe £2.00, rest of world £4.00).

EZ-Art Professional v1

This is a well documented, easy to use graphics package which is simply crammed with features. Over 20 different types of shapes are supported and over 20 different effects can be applied to blocks. EZ-Art Pro is STE enhanced, making full use of the extended colour palette. There's a built-in colour fill designer, support for up to ten workscreens and almost 20 drawing tools and modes. What's more, the package runs on a 520! Ratings:- ST Review 90%, ST Format 83% and voted Graphics Package of 1994 by ST Review readers. Now available for just £19.95 + P&P (UK free, Europe £3.00, rest of world £5.00).

Christmas Special Offers

1. Buy any TWO of the following: EZ-Art Professional, Easy Stitch or Family Roots II and deduct £5.00 from the combined cost with our compliments.
2. Add DegasArt to either of the above special offers for just £10.00.
3. Order any FIVE disks from this advert and get a catalogue free of charge. Limited to one per household.

PLEASE NOTE Overseas postage rates apply in all cases. These offers expire on 31st January 1996.

FALCON 030 SECTION

We were the first to support the Falcon and now have over 600 HD disks in our library. The Falcon catalogue costs just £1. Falcon disks cost £2.00 each unless otherwise stated. Please note that the disks in this section will NOT run on an ST or STE.

COMMUNICATIONS

F4454 CONNECT - GEM based comms package which implements all popular terminal emulations and file transfer protocols. Works on all communications ports (Modem 1 & 2, Serial 1 & 2, MIDI & LAN). BBS DIRECTORY - Amap of the UK with various options for locating Atari based bulletin boards. GSZRZ - An implementation of SZ and RZ protocols for use with Zmodem file transfers.

F5292 STARCALL - A combined terminal emulator, bulletin board and fax modem package. OASIS - Everything you need to get connected to the Internet. SET DEV 7 - Sets device 7 as the default modem port. XYZ MODEM 2 - Patched version of XYZ Modem for the Falcon.

F5420 WWW - Browse the World Wide Web live with this package. Access all your favourite Atari sites in glorious 256 colours! COSTA - Keeps track of time spent on the 'Net and gives you an accurate costing to check against your 'phone bill.

DEMOS

S-F5239, S-F5240, S-F5241 & S-F5242 LOST BLUBB by Independent - A superb multi-media presentation which combines a superb original soundtrack with computer graphics, real film footage and video overlaid onto computer generated backgrounds. Winner of the Fried Bits III competition. The best demo ever made! RGB ONLY, Needs 4 Mb and a hard drive. Four disk set, £7.00.

F5250 MUSAXX COMPILOTION 1 by The Chaos Engine - A collection of fourteen originally composed stereo soundtracks ranging from easy listening to disco music and acid house! All selected from a great main menu. Needs 4 Mb.

F5252 FRIED BITS III THING by Avena & Digital Chaos - Features numerous plasma effects, rotation zoom, 3D virtual world fly past, texture mapping, animated face distortion and lots more. Won 2nd prize in the Fried Bits III competition. RGB ONLY, Needs 4 Mb and a hard drive.

F5344 FUNCTION MAIN by Therapy - Plasmas, fractals, raytraced graphics, 3D objects, wireframe objects, DSP soundtrack and more. A Fried Bits III entry.

F5346 FRIED BITS III 96K Intros - Collection of nine of the top 96K (you'll be amazed at the quality!) intros from the competition as well as the three top graphic entries and a rundown of the voting for the competition.

DISK MAGAZINES

S-F5349 & S-F5350 DBA MAG #13 - A double disk compilation containing the very best articles from issues 9 to 12. Well worth the read. Needs 4 Mb and a hard drive. Two disk set, £3.50.

F5363 MAGGIE 18 - Fifth anniversary issue with lots of news, reviews and articles. Now in a jazzed up Falcon specific interface. A superb Kong game is included with this issue as a bonus!

S-F5409 & S-F5410 DBA MAG #14 - Popular diskzine presented in a 'Windows '95 look-alike interface. Includes Jaguar reviews, Falcon reviews, documented UFO sightings and lots more. Needs 4 Mb and a hard drive. Two disk set, £3.50.

GAMES

F5302 VROOM - Fast action racing car game. RGB ONLY. DOMINOES - A sliding puzzle game. MEMORY - Memory game where you match pairs of symbols. NEVER MIND - Mastermind (the peg game) on your Falcon.

TAROT - Card game.

F5343 KILLING IMPACT - Single level demo of this great game where you fly around on a jet-ski, annihilating everything in sight. RGB ONLY, Needs 4 Mb.

F5414 FRANTICK - As the name suggests, a fast action blast 'em up with aliens coming from both sides and you stuck in the middle! Addictive to the extreme.

F5417 CAVE MANIA - Best Boulderdash clone ever. Puzzles to solve, nasties to dodge, rocks to tumble! RGB ONLY, Needs 4 Mb. OFFWORLD SECURITY - Defender type shoot 'em up action and mind-blowing sound effects. Needs 4 Mb. BOMBAZAI - Wander round blowing up walls and your opponents. For 1-3 players.

F5418 GRAVON - Single mission demo version of this virtual reality 3D battle hovercraft simulator. Challenging mission featuring 3D stereo surround sound, realistic simulation, weather changes and artificial intelligence for enemy. Needs 4 Mb and a hard drive.

F5306 TAUTOLOGY II - An impressive variant of the Chinese tile game where you remove matching pairs of tiles. Includes multiple levels and two player option. Needs 4 Mb. DOUBLE BOBBLE 2000 - An addictive game where you fight your way through 100 levels, killing monsters. Includes two player option. Needs 4 Mb.

UTILITIES

F5018 RUFTRADE 2 - The very best German to English translator. ROUTE FINDER 2.1 - An electronic route map of Britain. Also on disk DESKINE, DUET, PROFILE 2, RECIPE BOX 4.5, ISHAR CHARACTER EDITOR.

F5293 ACCELERATE - Boost your CPU to 40Mhz and your FPU to 50 Mhz with this DIY electronics project. Also on disk are AFVIM, MANUALIZER, TTF VIEW, PYSGHAM, SVGA EMULATOR, TOS2GEM, LET 'EM FLY 1.3, CHAMELEON CUSTOMISER, LEXICON, CLAC, CEADPE, INSHAR, INSDATE.

F5351 CEADPE, CHMECUST, HTML2KRZ, JARXXX, N_MENTIM, PACK_CDK, PINATU18, PSPRINT, SGOOS DRIVERS, STDBI2, ST-GUIDE LITE, TOS2GEM, ZCONTROL, CHNG_MON.

F5365 ARJ 995, CD-EXAM2, DACAP0, DIRECT, DRUGS, NEORAM, PROLOCK, RCSTRANS, TCACHE64, UNCLRAM3.

F5419 68030 CACHE CONFIG, ANOTHER CD PLAYER, ADAPTKEY, APP_LIST, CAL_TIFF, CIVILISATION FIX, DARKROOM (remote control of household appliances), DIRSRT11, DISKBASE, DISKCAKE, MULTITOS SOUND FIX, ELFBACK (hard drive backup), MAGGIE FIXES, GOD_LOAD, ISHAR SURVIVAL KIT, MBE (encryption), MOVIEBASE, M_BOOT, PAL, RESET_FALC.

PAYMENT DETAILS:- All prices include postage in the UK. Overseas orders welcome. Please add £1 per order for Europe and 10% of order value (£2 minimum) Rest of World. Overseas customers please note - We can only accept payment by credit card or in UK currency (cheque drawn on a British bank is recommended). Cheques should be made out to FLOPPYSHOP.



Letters

More STOS and more rumours!

Firstly let me add my voice to the calls for STOS coverage. I suspect Tony Greenwood is your man to provide coverage for this. If not I would like to volunteer my services. I have used STOS since the day of its release, have written three STOS extensions and numerous articles for the STOSSER disczine.

Secondly I would dearly love to see an interview with the head of C-Lab re future plans for the Falcon. There are rumours floating about on compo.sys.atari.st that C-lab have restarted development on TOS 5.0, it would be very interesting to have these rumours confirmed or denied.

Thirdly I would like to see an in-depth review of the Medusa. I know that it has been released for a while, but ST Review only did the skimpiest review of it. With the upcoming release of the Medusa 060 perhaps it is time to rectify this mistake? I realise it is outside the price range of the average ST user, but we can all dream.

Than you again for an excellent magazine - certainly issue 6 had the best cover of any computer magazine I have ever seen.

Les Greenhalgh, Wiltshire

If I get many more letters like this I'm going to have no choice but to start a series on STOS. Meanwhile if Tony Greenwood would like to get in touch by Email I'd be happy to start discussing some ideas!

As far as rumours, I could fill a magazine with rumours. I just can't see the point. In the latest copy of the Dutch Atari magazine the front page was devoted to a thing called the Micro Box. Let it be said - in case you read about it on the Internet - the Micro Box is not even worth rumour status. Atari once had a prototype - but stopped development about two years ago. Two years ago it would have made a good rumour, now it's just a very old

Right to reply
Put pen to paper and speak
your mind in *Atari World's*
letter pages...

rumour of a project scrapped years ago. And as for a Medusa running a 68060 - apart from a few chips Motorola have not yet even finished debugging the chip yet; let alone started production!

Is C-Lab thinking about TOS 5, well yes I can tell you that they are if it makes you sleep at night. But don't expect to see anything in the next six months. We know there is something going on but will it ever be released as a new TOS? That really would be guessing.

Atari World's policy is quite clear. We will start talking about products, possibly even previewing them when there is a strong chance they will actually be released. And then only if the release is likely within the next six months. With few exceptions I believe a full review should mean that a product is actually available for you to buy.

Late again

I would dearly love an explanation. Firstly in your October issue of the magazine on the contents page it stated that the November issue would be on sale on the 20th October. What a complete and utter load of rubbish. My local newsagents could not get me a copy. They had the magazine crossed off of their list. What is going on? After that, they said that they had 'sold out', and at the moment it is only the 13th November. Can I not get Atari World from anywhere? Is there a good reason for this delay and confusion

as I am STILL waiting to see if I can get myself a copy.

WH Smiths do not seem to have a clue what they are talking about and you lot do not seem to be doing much better yourself. What is happening? Why can I not get this magazine? Maybe I ought to subscribe?

Please, please, please try and sort this out. For the last three months or so the magazine has been late coming through by roughly one week - surly something can be done. Is it because you are late getting every page together? I really miss not having Atari World.

Lloyd Hannis, Coventry

I'm afraid it gets even worse! In Issue 8 we made an error and stated that Issue 9 would be on sale November 17th and not December 15th as it should be! It just shows you can't believe everything you read - not even in Atari World.

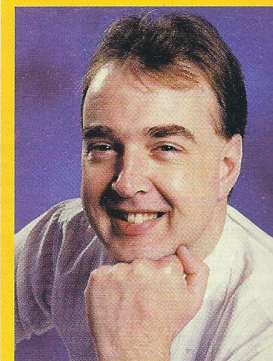
Specialist Magazines, the publishers of Atari World are new to the magazine publishing business and we lost a lot of experience when Vic Lennard had to leave from ill health. That said we are learning as fast as we can and at long last we have a magazine out on time this month! Having worked at a frantic pace to get this issue out we now plan to keep on schedule - and be on time with the forthcoming issues. As a guide Atari World should normally be on sale in the shops on the third Friday of the month before the

month on the cover. Hence this issue, the January issue comes out on the third Friday of December, the 15th. In some newsagents it can take slightly longer - in others it's on display slightly earlier.

As far as newsagents are concerned - some of them frustrate us even more than they do you! Any newsagent in the country can order Atari World for you each month. The fact that some will not is because some newsagents just don't want to go to the trouble, the same one for instance that would not order a war games magazine for me either, (yes I read war game 'comics' as a hobby)!

As far as the larger Newsagents like WH Smiths and John Menzies are concerned they can't stock every magazine in every store - there just is not enough space. In fact they can't stock every magazine even in

Write On...



Got something to say? Think I'm too grumpy? Or maybe too lenient? Hate the look on that smug, smarmy, self-satisfied face? Don't blame you. Write to me at *Atari World*, either at the address at the end of the magazine or via e-mail to andwright@cix.compulink.co.uk.

Letters

the largest branches. Hence the shops are graded - the bigger ones, the top 50% have to stock Atari World each month. In the smaller ones the managers have an option to stock it and they can always order it for you.

Apologies for being late on the past few issues, and apologies to our subscribers who also have been getting the magazine a little late too - however please subscribe - you will get the magazine early in future!

DD Gets The Blues

Once again the dreaded D.D. has struck again. I refer of course to Direct Debit. It has now removed the latest Atari magazine from the shelves of the newsagents. We have three newsagents on the main street in our town and all have numerous copies of PC magazines, some Amiga copies and a solitary copy of ST Format. Hardly attractive for a newcomer who has just bought an Atari.

People like me who have had their computers a number of years and have always supported their local newsagents are once more being made to pay in advance or go without. How often do you pay for something which you have never seen?

Now that Atari World has disappeared off the shelves I won't even know if this letter gets printed.

Mr H Marriott, Worksop

Frustrating I know! Did you know that there are 5,000 different magazine titles published every month in the UK? Try fitting those into your local newsagent!

Whilst we still sell lots of Atari magazines each month the hard truth is the market is not as big as it used to be. Hence we get lots of mail from readers who love Atari World, not enough buyers in total mean that you will only find stocks in the bigger newsagents.

My comment to you is the same as to the previous writer - order it from your local newsagent or better

still subscribe. Remember you can take a three month subscription to Atari World - you don't need to pay for a full twelve issues in advance if you do not want to.

A copy of this issue will be sent to you with my compliments - we do listen!

Italian connections

We are a public domain library, the only one in Italy. Our main aim is to translate and create articles, news, PD and shareware products into Italian. Please could you publish this letter in the hope that shareware authors think of letting us produce an Italian version of software. Also we would like to hear from any Italians anywhere in the world who would like a source of information and software in Italian.

Alex Camanini, Italy

I'm delighted to be of assistance. Italian ST owners and PD/Shareware authors can contact Alex at:

IM Systems Group
Vla Zamboni
41 25126 BRESCIA
Italy
Tel: 30 209 0563
(19:30/21:30)
Fax: 30 377 2010

Mental Gamers

The Atari scene seems to be quite active at the moment. What with 1GIG Hard Drives now going for £327 + VAT, the great news of the FALCON TAP SYSTEM giving the option of 2 GIG or 4 GIG compressed storage with a high data transfer rate. Good stuff!

I look forward to any Atari World review about the Falcon and I'm very interested in tape streamers - an area not really touched for the ST until now. I'd also be very interested in the pro's and con's of various printers - what is the reality of printing good quality documents on the ST without going over the top on expense?

Enough about printing and come



back to earth with a bang.

Noticed in total HORROR that a reader was requesting GAMES on the Atari World reader disk. PLEASE, PLEASE, PLEASE do not start the Gamesy mentality with Atari World which is now a real professional ST publication.

So, I would say to the reader, if you want games then go-buy a few blocks of highly coloured wood and play around with them, or if you are really desperate you could draw on your monitor screen! As you can see I'm totally non judgmental! I personally would not be too keen to shell out for the Atari World disk if games started creeping back in as up to now the quality of your disk has been excellent.

Steve Whitehead, Swindon

As all Atari World readers know, like you I'm not judgmental either. However I wonder if you have been reading the same magazine I edit each month! Every month we cover games for the ST, Falcon and Jaguar and long may it continue. Not every one who plays games is a teenager with any, I certainly did not see a teenager last time I

looked in the mirror. In fact I have a teenage daughter and her description of anyone over the age of twenty is 'sad' - I'm known as 'very sad'. But like very many Atari World readers I like my games and will continue to write about and cover any decent new games in Atari World.

I'm pleased to hear that you are a fan of our readers disk, I too think the content has been excellent and would like to publicly congratulate Joe Connor for putting the disks together. However both Joe and I will be more than happy to put the first high quality game we can lay our hands on onto the readers disk if we think it will appeal to our readers. Just give us the right opportunity someone.

As far as WP and printers are concerned it never ceases to amaze me how many of you want more and more about printers and word processors. I'll bear it in mind when planning future issues.

German Atari Bonanza

Thousands of visitors flock to the German ProTOS show.
Here are some of the highlights of the event....



The largest Atari show anywhere in the world this year was held in Germany over the third weekend in November and attracted thousands of visitors from all over the world. With over 50 stands Joe Connor and Sven Bornemark had their work cut out to bring you the highlights...

Platform wars

ProTOS opened its doors to Mac and PC exhibitors for the first time this year. With Atari seemingly no longer producing hardware and Atari software capable of running on a Mac or a PC this decision makes sense and certainly

added a feel good factor missing from recent Atari only shows. That said the event was very much for the Atari enthusiast, whatever hardware platform they are now using.

Apple Germany continued their campaign to lure Atari owners onto the Mac running copies of MagiC Mac alongside native Mac applications on their stand.

VHF Computer were demonstrating the Janus Atari emulator for the PC while on the Compo stand ST software was demonstrated using the Gemulator and a Pentium PC running under Windows 95.

The top end Medusa computer range was relaunched with the full dry ice, drop curtain treatment to unveil Hades, their own TOS compatible OS, to be used in their new models which features a PCI bus, 68040 CPU and up to 256Mb of memory. At £1500 for a basic model it's hardly a casual purchase but since they won't be available until next Spring you have plenty of time to think about it!

All this goes to show that Atari owners just don't want to leave behind their ST software – even if for some users new hardware has become essential. That bodes well for all ST owners who can expect much more software development over the coming years.

OS wars

Not content with adding TOS compatibility to other platforms the

boffins are inviting 'real' Atari hardware owners to dump TOS in favour of other operating systems (OS).

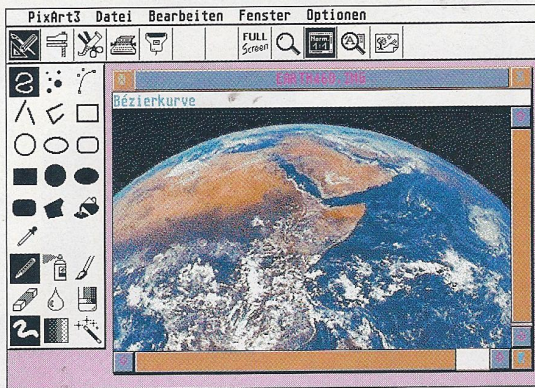
The Behne brothers (2B) and Application Systems Heidelberg (ASH) jointly presented MagiC 4, the complete replacement OS for all Ataris. MagiC 4 features pre-emptive multitasking, speed enhancements compared to TOS and the Ease desktop. It's sister product, MagiC Mac, enables Atari programs to run on a 680x0 Macs or under emulation on Power Macs.

OverScan also offer a route to multitasking for all Ataris which replaces the AES part of TOS with N.AES. All the nice features in the unreleased Atari AES 4.1 have been integrated along with a customised version of the Thing desktop (N.Thing), the newest version of MiNT, built-in ST-Guide support and an automatic install program.

TOS may still bite back with TOS 5 rumoured to be under development by a team of C-Lab programmers.



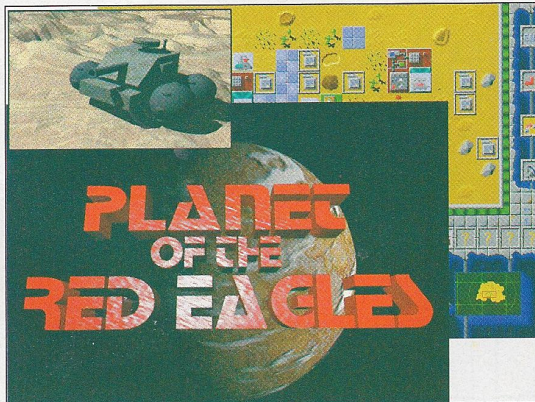
Kids of all ages noticed this ProTOS visitor



Crazy Bits were showing off the latest v3.2 of PixArt which used together with the Wacom Artpad offers pressure sensitive tools

Hard edge

Any ST can be upgraded using the PAK accelerators which offer various 68030/68040 CPUs at various clock speeds with options to add 68882 FPUs and a Panther ET4000 graphics card. If you need some extra breathing space there were several Tower case designs to choose from.



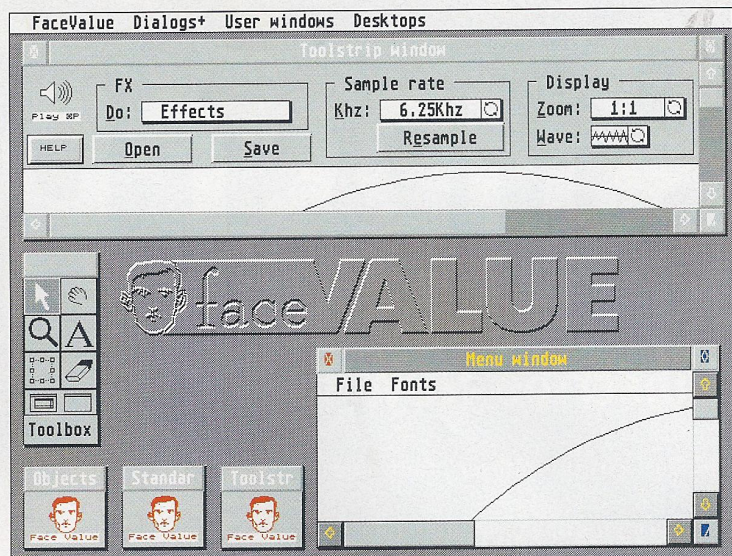
Here's a sneak preview of a simulation/strategy Falcon only game programmed by Olaf Goethe called Planet of the Red Eagles

After endless delays Falcon owners can finally choose from a selection of tempting upgrades.

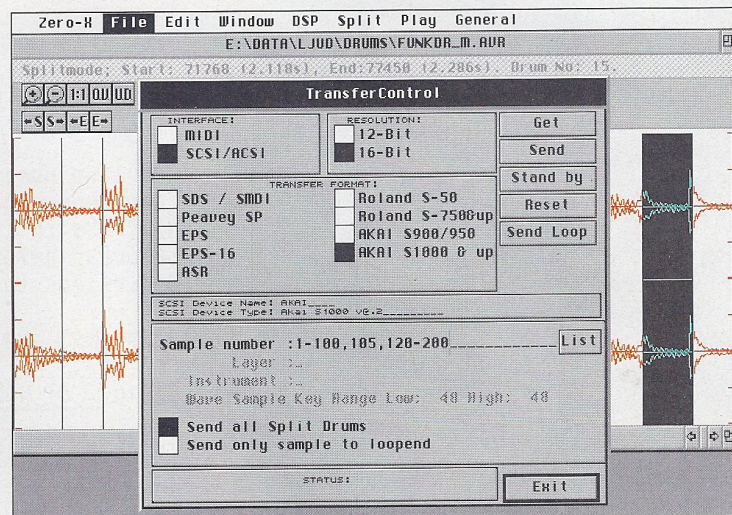
OverScan were previewing the Afterburner 040 which plugs into the internal expansion port to offer 040 performance using either a 68040 or 68LC040 CPUs running at 32/64MHz and includes 2 PS/2 memory expansion sockets to add up to 128Mb FastRAM and a through port.

Blow Up launched the FX 3-in-1 Falcon Xtender which combines SIMM memory sockets, resolution enhancement with the same features as BlowUP Hard 1, and system bus, DSP and CPU acceleration all on one board for £175. The downside is the installation which looked a bit hairy!

Lighthouse were offering a complete range of cases for STs and Falcons. Alongside the Desktopper a 19" rack case looks a much neater and stylish solution for musicians everywhere.



Adding modern GEM features to your GFA BASIC programs is child's play using Face Value



Zero-X v1.5 supports SCSI Dump to/from any AKA1 sampler, the EMU ESI-32, Kurzweil K2000/2500 and Peavey SP

Soft centres

Columbus Soft were demonstrating the GFA range of programming tools. New was their own Egro Pro tools and a new product called Face Value which enables GEM front ends for your programs to be designed in a RSC editor then run through Face Value to generate the required code. Cypress, a document processor, and a new v1.5 of Two-in-One were also available.

CiceroSoft also offer a range of programming tools and their BASIC to C converter which supports GFA, Microsoft and Siemens BASIC is reputed to generate astonishingly good C source code. The highlight was Cicero Visual Designer which simplifies the creation of front ends for programs and is available in Windows 95, NT, OS/2, Apple and Atari versions.

TEAM Computer were demonstrating NeoN which is a comprehensive 3D

design suite for the Falcon 030 costing under £500. NeoN includes object, scenery and material editors. Once created objects can be rendered, ray traced and animated. The output quality was stunning.

Many other popular commercial products were updated at ProTOS including Papyrus 4.0, NVDI v4.0 and Arabesque 2 and we'll be reviewing these as the English versions ship.

There were also many new non-commercial software releases and products and these will be covered in Public Arena over the next few months.

Amongst the British contingent, most of the big UK companies were present. We spotted representatives from 16:32, COMPO Software UK, Cyber Strider, System Solutions and TUS Developments. The good news then from ProTOS is that we can expect many of these new German products to be available in the UK soon.

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--	---

Array checks On Max Speed Safety

Output to ST RAM File name: _____

Pre-tokenised file: _____

Cancel
Advanced...
Debug...
OK
Compile

BASIC-2 File Edit Search Block Options Program Tools

: E:\SOURCE\FORMWIND.BAS

Line: 3 Col: 1 Mem:40721

```

'constants for list objects
CONST H_UP=0,H_DOWN=1,H_DRAG=2,H_PAGE=3,H_BOX=4,H_MAX=5,H_COUNT=6,H_A

DECLARE SUB form_pos(x,y)
'DECLARE SUB StartWinMenu(BYVAL menuaddr&,BYVAL title)
'DECLARE SUB TextRedraw
DECLARE SUB ProcessToolbars(BYVAL aes_win,BYVAL tool,BYVAL clicks,BYV
DECLARE SUB OpenTearMenuWin(BYVAL treeadd&,BYVAL title,BYVAL closepro

SUB AlignToolbarMenu
  SHARED woMenuTree&(1),woToolbarTree&(1),woBaseX(1),woBaseY(1),woOffX(
  SHARED woObjectTree&(1),woCancelObj(1),hgt_font_h,common1,commonhandl
  STATIC workx,worky,workw,offy,box
  offy=0
  junk=win_get(commonhandle,WF_WORKXYWH,workx,worky,workw,junk)
  IF woType(common1) AND woTmenu THEN
    tree&=woMenuTree&(common1)
    Setob_x 0,workx
    Setob_y 0,worky
    offy=hgt_font_h+3
            
```


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The solution? **SPEEDO GDOS** and **Timeworks 2.04** exclusive to Atari World! Speedo GDOS was produced by Atari as the solution to the lack of fonts on the ST, TT and FALCON 030. Timeworks 2.04 is a previously unreleased version of Timeworks Publisher that supports SPEEDO GDOS and lets you specify font sizes from within the Timeworks program itself.

- ◆ Comes complete with 14 Bitstream Speedo fonts, 8 different styles some in different weights.
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Timeworks 2 manual

GST, the producers of Timeworks Publisher 2, were always renowned for the quality of their manuals. The Timeworks 2 manual is a model of clarity and will help any user get the best from this great program. We have the original manual available for just £14.99.

The full manual for just £14.99

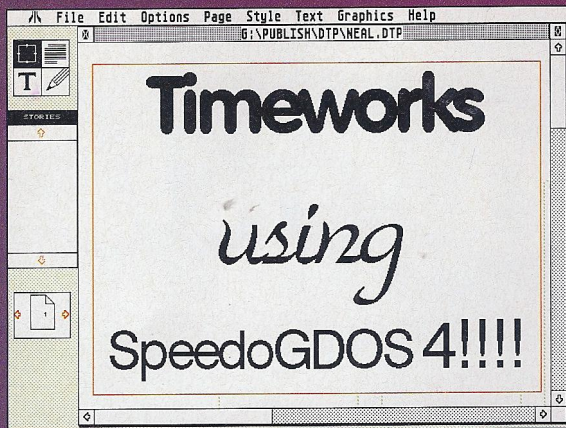
Get Speedo GDOS and Timeworks 2.04 for just £49.99. Save £50 when you also buy two font packs.

About fonts

The full version of Timeworks on the Atari World readers disks uses GDOS, the forerunner of Speedo GDOS. This means the fonts it uses are all bit map fonts, ie the font contains a collection of dots that go to make up each character. The fonts are therefore all fixed in size. For most DTP applications this is not very satisfactory. Whilst you can change the size of a bit map font using a font editor, the normal results mean a drop in

quality. Having created a new bit map font it can also be tricky to get Timeworks to recognise it. Speedo GDOS solves all this by using Speedo outline fonts. An outline font is a font that is stored as a collection of mathematical type expressions, ie lines, curves etc, not as a collection of dots. Speedo GDOS takes an outline font and generates a bit map font at any size you specify - subject of course to you having enough memory in your computer. Some outline fonts have hint information in them. Hint information is used to improve the quality of

fonts at smaller point sizes. This means that when you use a good quality original font you will get better quality at small point sizes than you would using an un-hinted font. The Speedo outline font format supported by Speedo GDOS has hints. However other outline font formats common on the ST such as Calamus fonts and Calligrapher fonts do not have hints. If you are using either of these programs you will see an improvement in output quality by switching to Timeworks 2.04 and Speedo GDOS.



Publisher 2 using Speedo GDOS Timeworks Publisher 2.04 and Speedo GDOS 4 in action!

Extra Speedo Fonts

There are two versions of SPEEDO GDOS that work with Timeworks 2.04, SPEEDO 4.2 and 5. You can choose which to buy if you don't already have a copy. However, any serious DTP user will soon want more variety. That report, menu, invitation, newsletter or advert can be easily livened up by a change of font. COMPO have two font packs with more than enough fonts to suit all but the most demanding Atari owner. Font Pack Office is designed for the designer producing documents typical to the office environment. It contains fonts ideal for reports, thesis, direct mail etc. Font Pack Gold is more for the 'designer DTP' type applications such as adverts and greeting cards. Both packs contain around 100 fonts each. The Office pack gives you a wider range of variants on the same font whereas the Gold pack contains more variety of font styles.

The number in brackets () gives the number of different styles of each particular font.

The fonts in the Office pack...

Futura (17)
Humanist Slabs 712 (4)
Blackletter (1)
Americana (4)
Bernhard Modern (4)
Caslon 540 (2)
Blippo (1)
Bernhard Bold Condensed (1)
Bernhard Tango (1)
BALLOON (3)
Bruce Old Style (2)
COPPERPLATE GOTHIC (5)
Bookman (2)
Caslon Openface (1)
Caslon Bold (2)
Futura Black (1)
Compacta (1)
Humanist 970 (2)
Humanist 521 ((11)
Aldine 721 (7)
Humanist 531 (3)
Bernhard Fashion (1)
Humanist 777 (7)
Caslon Old Face (3)
Aldine 401 (4)
Bitstream Amerigo (5)

The fonts in the Gold pack...

Amazona (1)
Impuls (1)
Bitstream Cooper (10)
American Text (1)
Brush 445 (1)
Egyptian 505 (3)
Zapf Calligraphic 801 (4)
Egyptian 710 (1)
English 157 (1)
Impress (1)
Poster Bodoni (2)
Kaufman (2)
Commercial Script (1)
Zapf Elliptical 711 (4)
UMBRA (1)
Cloister Open Face (1)
Goudy Heavyface (2)
Exotic 350 (3)
Zapf Humanist 601 (8)
MAXIMUS (1)
Goudy Handtooled (1)
Goudy Catalogue (1)
Hobo (1)
Wedding Text (1)
Freeform 721 (4)
Freeform 710 (1)
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Any port in a storm

Michael Anthony looks at two port expanders for the Atari.

With the exception of the basic installation procedure outlined in chapter one of the official Atari manual, there are absolutely no warnings provided covering one very important Atari No No. Aside from the MIDI and mouse/joystick ports, never, ever connect or disconnect a peripheral device while your computer is powered up!...not unless you're into some sort of local repair shop enrichment scheme!

I actually knew this and so recently purchased a parallel port "A-B" switch box figuring that this should solve the problem. A few days later, while computing merrily along, I twisted the knob on my lovely, new switch and promptly blew the disk/sound controller IC to smithereens...."That'll be twenty five Pounds, Sir!" I still use the switch...When my ST is turned off!

When Atari first designed the ST range, certain compromises had to be made in order to keep costs in line. Most notable of these was the omission of a buffering system (see Buffer Zone box) on all but the aforementioned connectors. This included the cartridge/ROM port found next to the MIDI jacks located on the left side of the computer.

Originally designed as a 128 kilobyte games and program cartridge slot, having to power down the unit to make a substitution seemed a bit silly, but like I said, unless you like living on the edge..... Although this area of computing never really took off, the ROM port was soon pressed into service by various developers for some extremely useful applications. Since it had the special distinction of having direct memory access (DMA), all sorts of wonderful innovations began to appear.

These included clock cartridges, hand scanners, video and audio samplers, specialised MIDI units, piracy protection dongles, etc. A company in Germany even devised a way to hook up one PC specific IDE CD-ROM drive to the port!.. But there's a problem. Since my X-ray vision went south (along with the super powers), messing about under my Atari while trying desperately and generally unsuccessfully to plug in one of my bits along with the inevitable damage to the Cartridge Port. Not too mention having to power down each time was proving a real tiresome chore. Although Atari had planned to eliminate the port in the Falcon, since the case didn't change, nor did it's inclusion in the design. It seemed that "Dongle Roulette" was to be my future!

Thankfully, two companies from Germany have now stepped in to save the day with some excellent, albeit not perfect, solutions. Essentially these hardware devices involve "buffered" ROM port cables.

Jam fast cart

Manufactured by the same folks that supply the 2 and 8 channel Falcon Audio Expanders and DSP Sample Clock units, the Jam Fast Cart is equipped with a 40 cm ribbon cable terminated with a cartridge style strip designed to plug into the computers ROM port on one end with a regular female ROM port adapter on the other. The buffer IC's are secured under a layer of shrink wrap on the computer connector.

Buffer Zone

Most all types of computers utilise some form of port buffering. In the Atari range, the system is used in all MIDI connectors and the mouse/joystick jacks. The simplest way of understanding buffering in an electronic circuit is to imagine that there are two very volatile chaps who must still communicate with each other (The ROM port and our connected device). However, if allowed to get together, they would most likely do major damage to one another. Our solution is to appoint an impartial messenger to carry information back and forth and as long as one of them doesn't "kill" the messenger, peace (and good communications) reign. Electronically, this job is usually done with special integrated circuits (ICs). Even if the circuit is broken or shorted out at the input or output of the buffer IC, no shock to delicate internal circuits is perceived by the computer or the attached peripheral - in other words, they're kept well apart, never having any real contact. Clear as glass, right?

In operation, the unit performed flawlessly. I found that I was able to change attached devices anytime I wished without the requisite power down. Many dongle protected programs appeared to keep going, once fully booted, even with their dongles removed - but not for long so beware! The Jam Fast Cart is well made, simple and all connections are well out of harms way.

The socket even has a piece of glued on circuit board to help prevent upside down installations. Although primarily designed for mounting with the supplied screw post into a Tower case or similar, it functioned perfectly well stretched out next to my ST. Very useful and highly recommended.

JAM FAST CART	
Manufacturer: Line Audio Design Contact: 00 46 44225496 (Sweden) Price: £37.60	Requirements: Any Atari computer with cartridge/ROM port. Pros: Compact design / clear instructions Cons: Short cable
SCORE: 8	

Buffered Rom Port Cable

This a hunky bit of kit. In many respects similar to the Jam cable, the DDD unit is also intended to be installed into a Tower style case. The review unit was not supplied with instructions and since up/down was not identified, it took a minute or two to get it properly oriented. Once on-line, all performed as advertised. My only reservation came as a result of the exposed, non-insulated circuit boards - however, this particular unit was specifically designed for a mounted type installation having two screws provided for the purpose.

Everything about this unit suggests quality which is really what brought the score on a par with the Jam unit. Standard SCSI ribbon cable is also utilised (it might even even be a bit too long!) and both end connectors are quite well made. Once again, I was pleased with the results. It's really a toss up on which cable to get - perhaps one of each? These are basically very simple devices and should supply years of worry free service.

BUFFERED ROM PORT CABLE	
Manufacturer: Digital Data Dieke Contact: 00 49 511 637054 (Germany) Price: 66DM plus 20DM shipping	Requirements: All ROM port equipped Ataris. Pros: Big, stout design / professional appearance Cons: Some exposed connections
SCORE: 8	

Jaguar Jag rag

Iain Laskey puts down his joypad for a second or two to pontificate on all things Jaguarish.

It's been a funny year for the Jaguar. After a low key launch last year, 1995 was supposed to be when things really started to happen. So where are we now? The Virtuality deal is off. The CD ROM drives are just starting to trickle into the shops and the total number of games is still far short of the numbers that were being thrown about with such bravado. And to make it worse, the opposition have now released their next generation consoles to great acclaim.

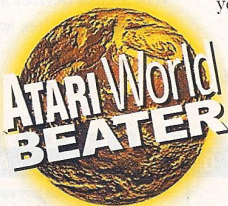
It's not all woe though. There has been a veritable rush of games in the last few months. Strong titles such as White Men Can't Jump, Ultra Vortek and Attack of the Mutant Penguins have shown that the Jaguar can deliver the goods. Even third party games have been much more promising with Rayman and Power Drive Rally being particularly good.

It can't be denied though that Atari have an uphill struggle ahead of them if the Jaguar is to be anything other than an 'also ran'. We can only hope that Atari's recent move into PC games does not signal they have lost faith in what is now their only piece of hardware after nearly 20 years in the business.

Power Drive Rally

Iain Laskey puts on his crash helmet and gives the new racer a spin.

Time Warner Interactive have finally arrived on the Jaguar scene with their first title, Power Drive Rally. This is an enhanced version of the title Power Drive that was released on the SNES and PC some time back.



I must admit to have been expecting another average game having played it briefly some months back. How wrong could I have been! This game has obviously had a lot of effort spent on it and now oozes playability and great attention to detail.

Power Drive Rally starts you off with a choice of 2 standard cars. From here you go through 48 different races in a bid to complete the rally. At each stage, you need to perform a qualifier race before going up against the computer controlled car. If you complete the race in the given time, you win cash, if you're first, you get a bonus. If you lose you have to pay again to race. The object of the game is not run out of cash. If you do then it's all over.

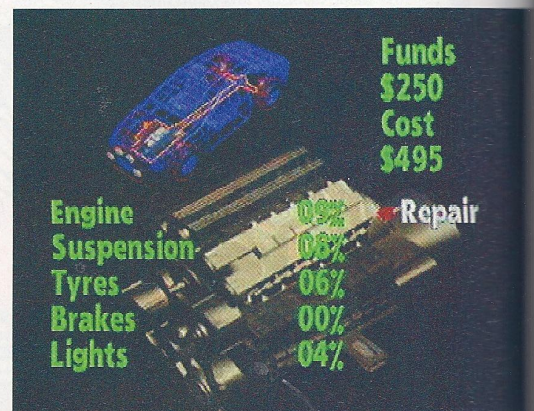
After each race you have to spend your precious winnings on repairs to your car. After several races you can upgrade to a better model, funds permitting.

Periodically you get put through a skill test which involves reversing, stopping on lines

and finding your way through a circle of cones within a given time. This is easy the first few times but soon gets much harder. By level 20 onwards, trying to turn tight circles in snow becomes a real test of your control and when every cone you hit loses you

15 seconds, it can become a bit frustrating too. However, it does have that 'just-one-more-go' factor that keeps dragging you back for more.

The various courses are set in different countries. Weather conditions from dry to snow along with day or night racing all help to add to the atmosphere. If you're unlucky enough to be driving past



Careful driving is rewarded with low repair bills - yes, I'll have that Celica in no time!

water when lightning strikes, the flash can really dazzle you. In addition, the roads often contain obstacles that can be steered around or tackled head on. It's great fun to see your car bounce through the air after hitting some rocks.

The control of the car is excellent. You can make full use of the different

conditions to slide and slide around corners. The dynamics are spot on and it feels very realistic when driving. Each type of car has genuinely different driving characteristics and needs to be learned to get the best from it.

During each race, your navigator barks out the directions

such as 'right 90' and 'left hairpin' to warn you of the track ahead. The computer controlled car is fairly easy to keep up with initially but gets much more proficient later in the game and becomes extremely hard to beat but never so hard as to put you off.

Power Drive Rally is full of wonderful

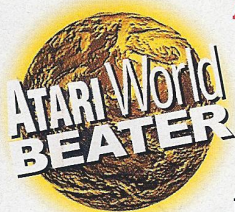


Put the pedal to the metal around the corners and you're rewarded with power-slides!

little details such as the tracks left by the cars, tinkles of broken headlights when you catch barriers and changing engine pitch inside tunnels. Reversing lights come on to help you during those delicate backwards manoeuvres.

The graphics are nicely detailed and well animated. The cars and other objects cast realistic shadows. The sky is reflected in water and the reflections moves as you

do. The tunes complement the game well. The spot sound effects as well as the navigators voice are all clear. There are very few Jaguar games that I would consider essential purchases but Power Drive Rally is one of them. The whole game feels very polished and is great fun to play. After what has been far too long, the Jaguar is finally getting games worthy of its power.



Attack of the Mutant Penguins

From the land of Monty Python and The Hitch-Hiker's Guide to the Galaxy comes the latest example of zany British Humour. Iain Laskey comes face to face with the Mutant Penguins.



The mutants make their way to the Doomscale machine - it's up to you to stop them!

Every now and then a game comes along that can't really be described in anyway that does it justice. Attack of the Mutant Penguins, or AMP, is one such game.

Aliens have decided to invade the Earth and prior to arrival they've tuned into our TV broadcasts to see what we look like, hoping to infiltrate us by copying our appearance. Unfortunately for them they picked a nature program and mutated into the first thing they saw - penguins. At the last minute they realised their error and tried to make the best of it by dressing up as different types of humans, hoping they'd be able to blend in. The only things that stand in their way are Earth's last

hopes, Rodney and Bernard.

Each level has a theme such as cowboys and indians, clerics or Elvis. The object is to stop the Mutant Penguins from reaching the Doom Scales. You can play as either Rodney or Bernard. Each has a different set of weapons. To help you in your quest you crosshave various machines and tricks you can use. In addition, the real penguins who are upset at the bad press these upstart mutants are giving them, have decided to help you beat the aliens. If more mutant penguins get to the scales than good penguins then the Doomsday Weapon is triggered and life as we know it comes to an end.

Like the classic game, Lemmings, each level of AMP requires you to work out the correct combination of actions that will allow the good penguins to get to the scales whilst stopping the mutants. Various chests are placed around each level. These can contain parts of extra weapons, good penguins and other bonus items. To open them you need to collect the blue gremlins and drop them on the chests. The more gremlins, the quicker the chests open.

The machines are delightful devices. Some have rotating knives which slice up the mutants as they try to walk past. Others grab the bad guys and skewer them on big metal spikes resulting in a flurry of feathers and bits of gory body debris as the victim explodes. Wonderful!



To think, the future of the universe depends on Rodney and Bernard!

The different themes are also important. On the Elvis level there are jukeboxes. If you can find a coin and deposit it in the jukebox, music starts to play and any Elvis penguins that pass by just have to stop for a boogie, buying you valuable time. The cowboy levels have campfires and if you manage to light them, the cowboys all sit by the fire, start eating beans and, well, have you ever seen the film Blazing Saddles?

At the end of each level you get one of 3 random mini-games to help you vent those anti-alien feelings some more.

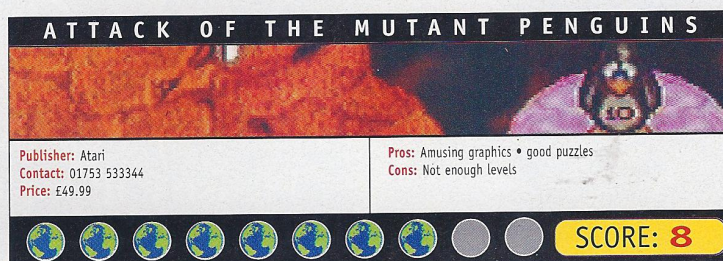
The game can be a little confusing to start with and helpfully Atari has put in an automatic tutorial that explains what everything does the first time you use it. After that, gameplay continues uninterrupted.

Great graphics

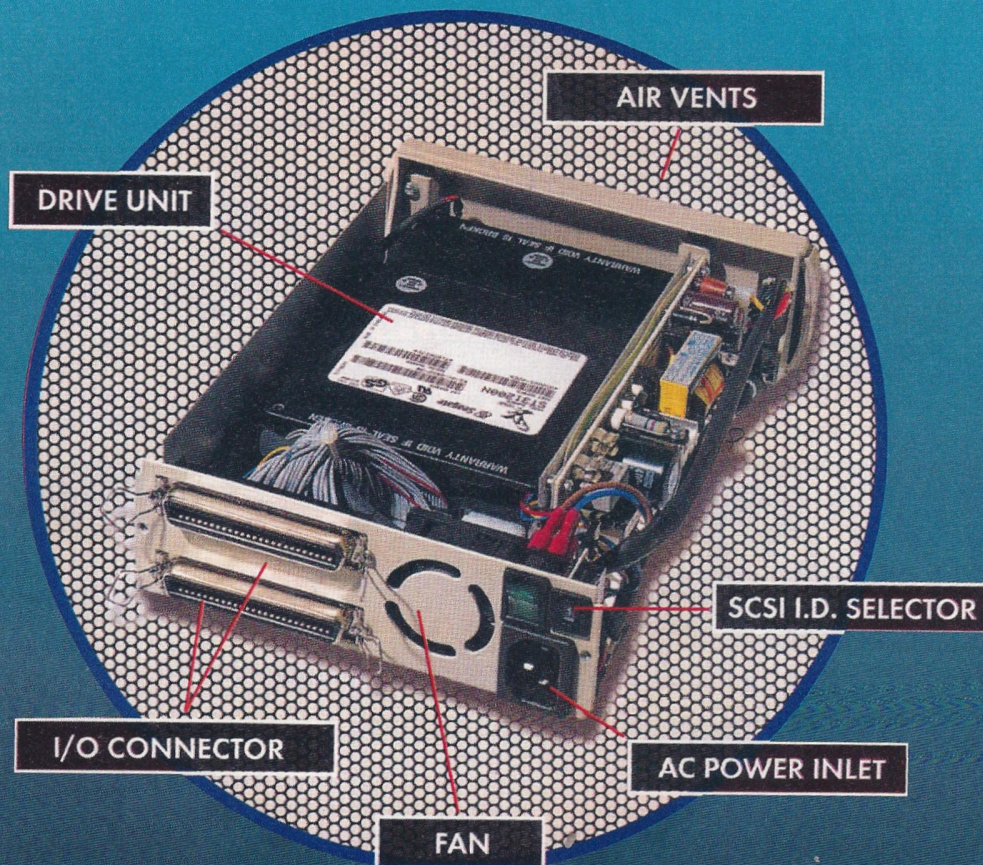
The graphics are very amusing with brilliant sprites, all well animated. Some elements are so good it's often tempting to do things just because the results are funny, not because they actually help you complete the game. The noises are generally good although the intro music sample is terrible. Very rough sounding.

AMP requires a bit of effort to work out what to do. It's well worth persevering though. The only real problem is that there are only 60 levels which isn't really enough compared to other games of this genre. Maybe an opportunity here for AMP 2?

AMP is the first of a series of games that has been produced by Atari's European Development Centre and as a benchmark of quality it sets a fine standard.



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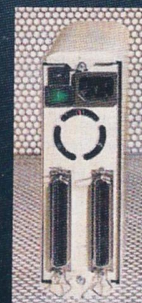
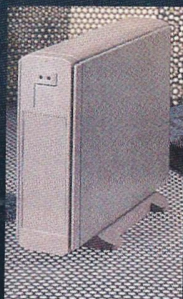


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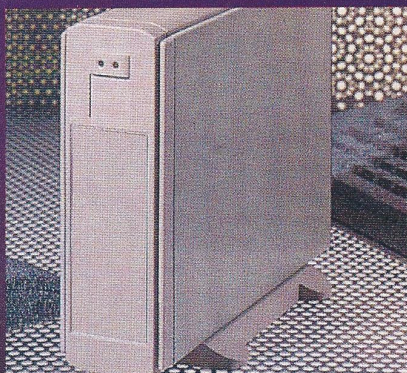
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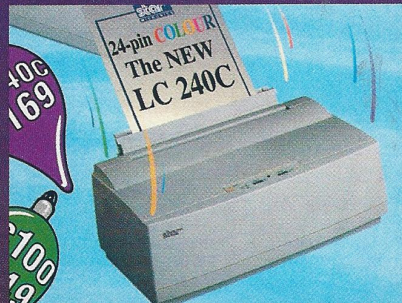


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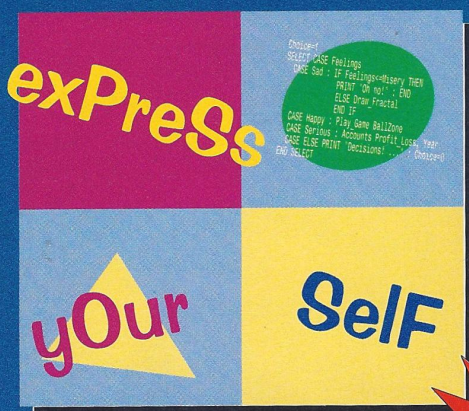
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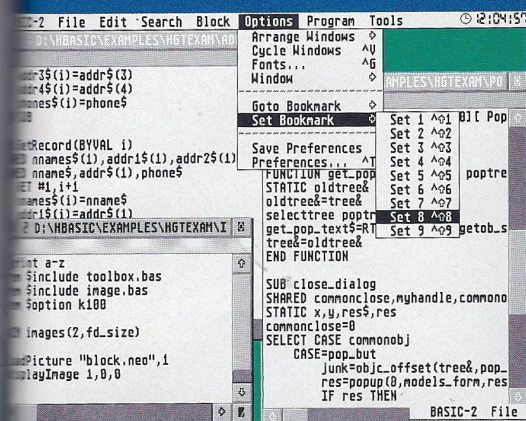
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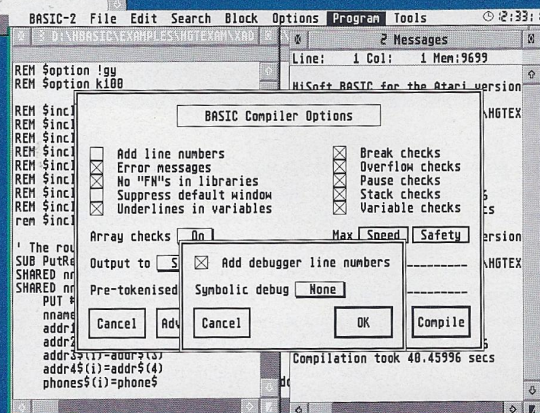
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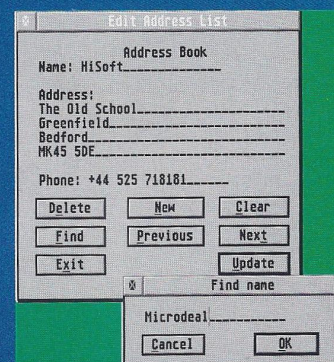
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BASIC

Ofir Gal continues his BASIC tutorial.

As I have shown in last month's BASIC tutorial, there are normally several ways of doing a job in BASIC. In most cases, the choice is up to you, but not in the case I'm going to demonstrate this time. Sometimes, subtle differences in the meaning of BASIC commands can make the program fail to do its job correctly.

Let's look at something that is very easy to do in BASIC - printing. We've already touched upon the LPRINT command. This is BASIC's equivalent of PRINT. It works exactly the same, but sends the text characters to the printer instead of the screen. Let's examine this command in more detail.

```
LPRINT "This is some text"
LPRINT "and this is some
more text"
LPRINT 10+5
LPRINT 10*5-3
```

If you run this simple examples with a printer connected to your Atari it, will print the two lines of text followed with the results of the simple additions and multiplications. The interesting thing is that the lines will be separate, printed one below the other. This is because BASIC sends the printer a carriage return and line feed characters at the end of each LPRINT command. These characters are used to tell the printer to advance the sheet of paper by one line and move the printer head back to the beginning of the line. There are several more such characters that are standardised as basic printer commands, but in order to fully control them we must abandon the comfort of LPRINT and use a lower level command.

Lower level BASIC commands put more power in the hands of the programmer at the cost of a little extra

work. One such command is OUT. As its name suggests, OUT is used to send data out via a port. Since Sts and Falcons have several ports, you must also specify the port. The ports are numbered: 0 for the printer port, 1 for the modem and 3 for the MIDI out port. Don't try other number unless you have read the BASIC manual and you fully understand what you are doing.

OUT takes a second parameter - the ASCII value of the character you want sent out must follow the port number. Don't worry, this is much simpler than it sounds. Thanks to another BASIC command, conversion of "human" letters and digits to ASCII values couldn't be easier. So let's look at an example:

```
OUT 0,ASC("A")
OUT 0,ASC("t")
OUT 0,ASC("a")
OUT 0,ASC("r")
OUT 0,ASC("i")
OUT 0,12
```

The first five lines output the ASCII values of the characters that make up the word "Atari", but what is the 12 at the end? Try to run this program for the answer. The value 12 stands for a form-feed and is a command understood by all printers. When a printer receives this command it immediately ejects a sheet of paper.

Command the printer

The standardisation of printer commands doesn't go much further. Different manufacturers use a variety of command sequences to program their printers, but the underlying system is always the same. I will use the Hewlett Packard DeskJet range in my examples, but you can easily convert the commands if you have a different printer make by

checking the back pages of the manual. The printer "knows" it's being programmed when it receives the Escape character (see Printer Commands table). The ASCII value of the Escape character is 27.

It's rather useful to be able to reset the printer. Other programs may have modified its settings, so before you print from your own programs you could send it the reset command. This is almost universally done by sending the ASCII value of an upper case E - 69. The following example should reset virtually any modern printer.

```
OUT 0,27
OUT 0,69
```

Similarly, you could send commands to the printer to select fonts, print quality, margins and more. The example code below shows a sub program called SetPrint that resets the DeskJet and sets it to print in economy mode, ideal for printing out read-me files and the likes.

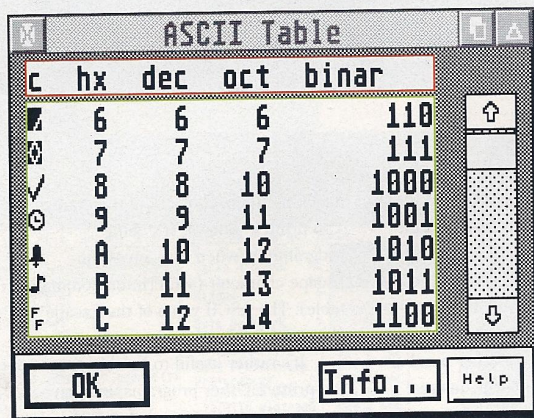
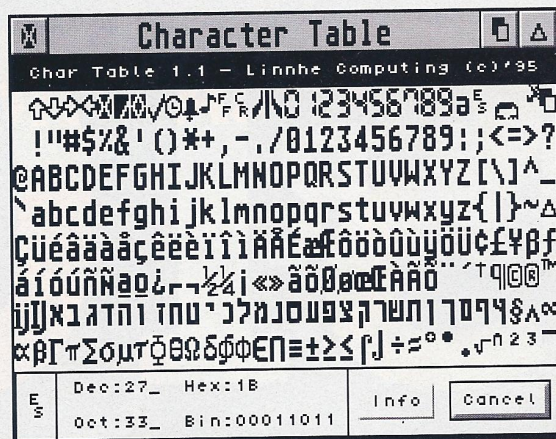
```
SUB SetPrint
OUT 0,27
OUT 0,69
OUT 0,27
OUT 0,42
OUT 0,114
OUT 0,49
OUT 0,81
END SUB
```

Using the printer

You now have the necessary information to start using the printer in your BASIC projects. In practice, you will use a mixture of LPRINT commands for straight-forward printing and OUT statements for more accurate control.

One possible project for you to get started on is a program that will print out read-me files and other text files.

You don't have to memorise the ASCII values of letters. You can use one of these two CPX modules - ASCII Table or Character Table. Both are available from PD libraries or BBSs.



Normally, these can be printed from the desktop, but by writing your own program you could introduce many features. You could, for example, add automatic page numbering, have the option of printing odd or even pages only, selecting print mode and font and more. The example code below is by no means a complete program, it is more of a skeleton to guide you in the right direction. If you develop a complete printing utility, please send it to us along with the source code and we will put it in on our reader disk. The best entry will also entitle its author to a free subscription for ??? issues. *** Andrew, please enter whatever prize Neal wants to give. Maybe the complete BASIC with manual? ***

The example introduces a new BASIC command. `COMMAND$` is used to make your program take a parameter. When compiled it TTP instead of TOS. Under TOS 2 or later, or a decent alternative desktop you can simply drag the file you want to print and drop it on the program icon. In this example, the name of the file you drop on it is stored in the text string variable `fi$`. Arrays are another important concept in BASIC and are used for storage of multiple lines in one chunk. See the box about arrays for a better understanding of the example.

The program starts by creating the array which will be used to store the text.

Standard Printer Commands

Name	ASCII Effect
Backspace 8	Move the printer head one character back
Tab 9	Move the printer head to the next tab position
Line Feed 10	Advance the paper by one line
Form Feed 12	Advance the printer head to the next page ejecting the current page
Carriage Return 13	Move the printer head to the beginning of the line
Escape 27	Indicate to the printer that the following sequence should be treated as a printer command and not printed

Next, the command line is read and the file is opened. The `FOR/NEXT` loop reads in 56 lines of text and a similar loop than prints it. The reading part of the loop uses the `EOF` command (End-Of-File) to check whether there are still more lines of text to read. Attempting to read non-existing lines will result in an error or a crash. Reading a whole page effectively in one go is much faster than reading and printing one line at a time. Finally, the program ejects the page, the file is closed and the program ends.

```

DIM a$(55)
fi$=COMMAND$
OPEN fi$ FOR INPUT AS #1
FOR c=0 TO 55
IF NOT EOF(1) THEN
LINE INPUT #1,a$c
END IF
NEXT c
FOR c=0 TO 55
LPRINT a$c
OUT 0,12
CLOSE #1

```

And finally...

The program is still very limited. It can only print one page for starters, so next month I will continue this tutorial and help you a bit further in the understanding of arrays and printing.

You may already be wondering about graphics and Speedo fonts, but these are much more complex and require knowledge of GEM. It is better to first establish an understanding of BASIC and programming in general. Once you do, understanding GEM or any other graphical operating system is quite easy.

Arrays

Variables are a powerful part of any programming language, but in some cases they are not powerful enough. Their limitation is that you can only store a single item in a variable, be it a value or a text string. Arrays are a special kind

variable that overcome this by being able to store multiple items, as long as they are all of the same type. An array must be created before it can be accessed using the `DIM` command. To create an array of integers with 100 items simply put `DIM a(99)` at the beginning of the program. The number 99 is used because arrays start at 0.

Once an array is created, you can access any of its variable using an index number. `PRINT a(9)` for example will print the contents of the tenth variable in the array. In the example program this issue you can see a classic use of an array.

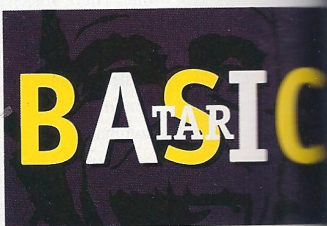
BASIC Commands

OUT: Used to output bytes of data to a device. `OUT` takes two parameters, the first is the port number, the second is the value to send. The two parameters must be separated with a comma.

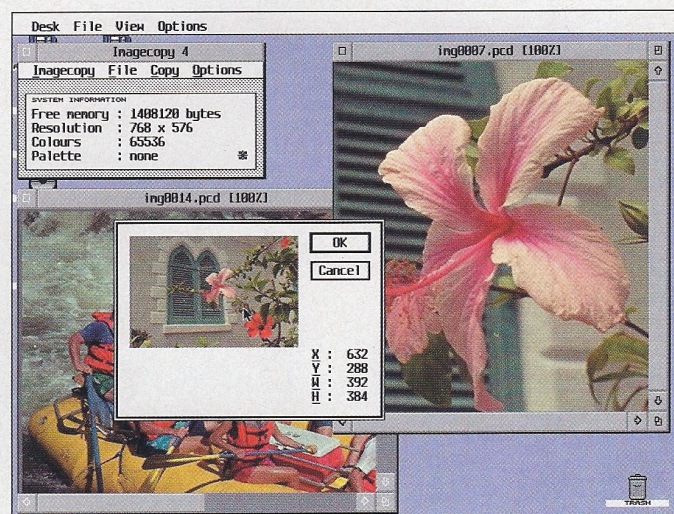
ASC: A BASIC function that converts any single text character to its ASCII value.

COMMAND\$: A function that enables the program to take parameters from the desktop. A program that contains this command is compiled as a TTP (TOS Takes Parameters) executable. When running from the HiSoft BASIC editor, a command line will be displayed where you must enter the full path and file name.

EOF(file number): Use this function to check whether you reached the end of file before trying to read more data from it.



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Beauty versus the beast

While choosing the right word processor for you is an important decision, the true power user will use two or more and learn to exploit their unique strengths. Günter Minnerup gives some tips on getting the most out of Protex and Papyrus.

Ever since the advent of graphical user interfaces, the emphasis in software design has been very much on friendliness. Ideally, the user should not be required to have any special knowledge of the internal workings of the computer code, and be able to use all the major functions of a program by selecting from text menus or visual symbols with the mouse pointer, click a button and go about his or her job without further distraction.

Fine. But this state of blissful innocence also means that the user is totally dependent on what the software authors have provided, unable to change much about the way it works, or to add sorely missed functions to the package. It is for this reason that many of the more experienced computer users have long resisted "friendly" user interfaces and remained faithful to more primitive command line interfaces. You may not get much more than an unsympathetic prompt after boot-up, but you're in full control of what happens.

Two approaches

Two of the most popular Atari word processors, Protex and Papyrus, clearly illustrate the difference between the two philosophies. Papyrus is easily the friendliest piece of writing software I have ever encountered on any platform - Atari, Mac or PC - and quite powerful it is, too. For most routine writing tasks I would not touch anything else: once the master pages and templates are properly set up, as described in last month's article, most letters, articles and even book manuscripts

are really just a question of entering the text. What's more, Papyrus is well and truly WYSIWYG as the screen display will always show precisely what the printed output will look like.

Protex, by contrast, is rather WYSIWYG (what you see is far from what you get) and can be the source of endless frustration and reams of wasted paper if the end result refuses to match your expectation. You need to understand how Protex works in order to use it efficiently, and that means diving deep into the murky world of printer control codes, embedded commands and character tokens. Cynics might say that Protex is little more than a slightly jazzed-up (it does have menus, after all) text editor from the dark age of CPM and MS-DOS. Why would anyone still bother with it?

The answer is that the necessary effort to come to grips with a command line interface is richly repaid in a degree of programmability and flexibility that Papyrus - and those of other "friendly" word processors - can only dream of. Almost every aspect of Protex can thus be modified to suit your needs, and completely new functions added.

Macro power

Take the example of the UNDO function common to all modern word processors. If you find that you have deleted an entire paragraph by mistake, hitting the UNDO key will bring it back - phew! But what if the block is too large to be retrieved from memory in the event of error, or what if the mistake was with the one but last block deletion? In Protex, you can write a little routine that will save

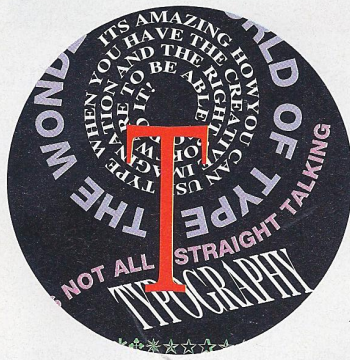
each deleted block to the hard disk, under sequentially numbered filenames that are continuously updated, so that you can always recover from your error irrespective of what's in the RAM undo buffer. This little life-saver can be assigned to a key combination, for example Shift-DEL, and saved for future use. Hey presto, Protex has acquired an additional function!

A much simpler use for such "macros" is to assign frequently used phrases - like the beginning and end of a standard letter - to single keystrokes, and an only slightly more ambitious one is to do the same with repetitive search-and-replace operations: as the editor of a newsletter, for example, you may need to replace double spaces placed by old-fashioned typists behind full stops and commas, or weed out the incorrect or inconsistent use of single and double quotes. The possibilities are endless.

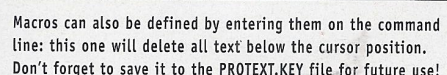
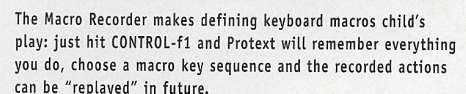
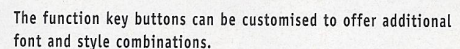
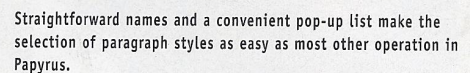
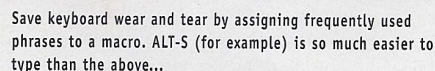
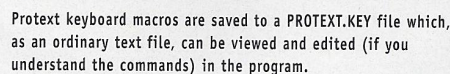
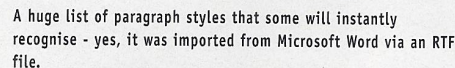
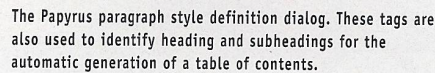
Papyrus does not know about macros and is generally shielding much of its inner workings behind the good-looking, friendly exterior. While you can search for some unprintable control characters, for example, by selecting them from a convenient pop-up list, those not contained in that list are inaccessible. In Protex you can use all such characters by referring to them by their decimal or hexadecimal ASCII value.

Neat tricks

Just to balance the argument, however, Papyrus even without macros and a sophisticated programming language - has a few neat tricks of its own. By far the most important of these is its ability to



Finally, every Papyrus user is familiar with the function key buttons at the bottom of the screen. But did you know that these can have additional font styles assigned to them? To do this, simply select the desired font and style options from the Font Panel, CONTROL-click on the required button and the new, customised button will automatically apply the font and style chosen to any selected text. Or, to give due credit to one of Papyrus' truly unique abilities, to several distinct text selections simultaneously.



Techno-colour dreams

Rob Perry takes an in-depth look into the colourful world of Atari, and finds out just how to get those stunning lifelike pictures onto our computer screens.

Computer technology has come a long way in the last 15 years. We now see computer processors running hundreds of times faster, some with extra help from co-processors like DSPs (Digital Signal Processors) and FPUs (Floating Point Units). We have seen input devices change from simple rubber keyboards, to ergonomically designed tactile keyboards, with optical mice and digitising tablets. We also have seen output devices change from simple TV sets, to huge flat screen colour monitors with digital memories and microprocessor controlled buttons and switches. Where has this technology left us Atari users?

Have you ever been envious of the fantastic graphic displays seen at large computer shows? Do you pop round a friend's house to view your latest GIF pictures on their Falcon because your ST computer can only show them in black and white? Or more importantly are you thinking of selling your Atari and spending all your savings on a Pentium PC or PowerMac computer? Well, take a good hard look at what you have, count up all the money you have spent on software over the years, listen to the moans and groans of the last person who switched from the user friendly Atari onto the Windows or System 7 computers, and the

chances are you will be wishing you didn't even have to consider it.

If we were to take a look at the average user in the Atari market, we would probably see a humble 1040 ST, running with not much more than a mouse, a keyboard and a 14" black and white monitor. The Falcon and TT users will normally have a VGA or SVGA type colour monitor running similar, if not the same software. Atari World brings you a look at the various options each Atari user has to improve their graphics, why they would want to, and what all that tech talk really means.

Standards

First of all let's take a look at the ways a computer can output graphics. Since the 1980s when the big bang that started off companies like Sinclair, Commodore and Atari in the home computer production business, we have seen hundreds of manufacturers cashing in on the rat race to create the perfect machine for the technophile. With all these early makes and models using different monitors and weird and wonderful cable connectors, it was inevitable that some video standards would be introduced. Almost all computers now use some form of VGA compatible monitor, and even if you can't plug one straight in, you can normally get some

kind of adapter to get it connected. You may have heard the terms 'Composite' and 'RGB' thrown around when someone is talking about computer screens, but have not known what these mean. Take a look at our summary of the more common video signals a computer will use to display a picture on the screen.

RGB is the ideal method to transmit pictures from a computer to a colour monitor. The next thing important to remember about a video signal is that it can be transmitted at various speeds. The computer will have an internal clock crystal to drive the signal, and it's just how fast that crystal goes that dictates what size resolution you can use. The ST is only capable of producing a resolution of 640 x 200 in 4-colours using video speeds of 15.625 kHz horizontally and 50 Hz vertically. This suits a TV or medium resolution monitor. The Falcon however is capable of producing a resolution of 640 x 480, using a horizontal frequency of 31.470 kHz, twice that of the ST, and a vertical frequency of 60 Hz. The Falcon has the video speeds necessary to use a VGA monitor. However, it is worth remembering that the ST has a high resolution mono mode at 35.7 kHz, and this will work on any size VGA compatible multisync monitor with the correct adapter.

Pump up the clock speed

OK, so you want to use a better monitor with a larger resolution, so why not just put a faster clock crystal into your computer? Well, at present only the Falcon can handle a change in video chip speed without adding a major new piece of hardware. The two devices "Blowup" and "Screenblaster" do it simply by fitting in between the Falcon's monitor connector and the monitor lead, and give up to 66% increased clock speed. Both devices come with video management software to allow you to design your own resolutions, or if you prefer Screenblaster, comes with a

Video Signals

ECL Signal

An ECL (Emitter Coupled Logic) signal is used for large monochrome monitors. The TT uses this method for its large monochrome resolution as it works very nicely at high video speeds.

RGB (Analog) signal

An RGB (or Red, Green, Blue) signal contains all the information needed to make a colour picture. Cables transmitting the signal will always carry each separate part of information along different wires. This information contains the Red, Green and Blue in a picture, along with timing for Horizontal Sync and Vertical Sync. Most colour computer monitors use this standard, and modern TVs and videos may also have RGB input in the guise of a Scart port.

Composite Video signal

A Composite signal can be carried through only one wire or coax. All of the information for a colour picture is compressed into one stream of data. The other wires present in a composite cable are used to transmit sound, in either mono or stereo, giving an overall total of two or three cables. You will find composite video inputs on your video, or possibly your TV. The quality is better than TV modulated, but not as good as RGB.

TV modulator

A TV modulated video signal is all of the information for a colour picture as well as sound compressed into one stream of data, so just one wire (or coax) is needed to transmit the picture. This technique can only be decoded by a device with a modulator input, such as a TV or video. This also gives the worst picture quality of the signals listed here, as it is prone to interference.

range of preset resolutions that have already been worked out. Take a look at the screen shots of both programs to get an idea of what is involved in designing your own resolutions.

Des res

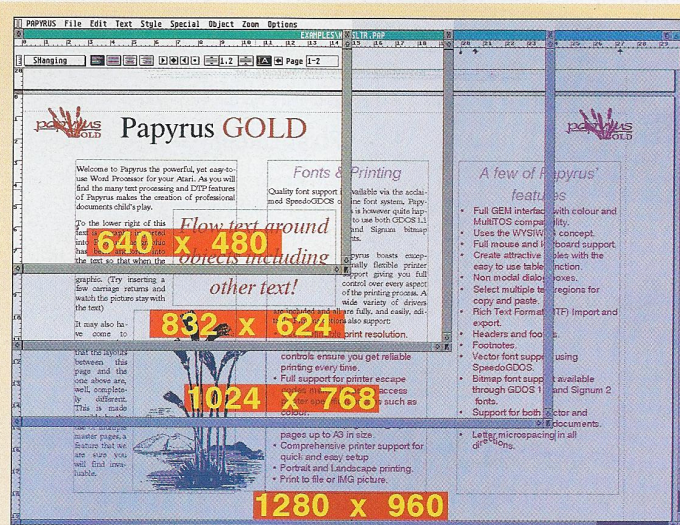
It looks complicated at first sight but once you know the basics the rest falls into place. The main values that you need to change to get a picture up on your monitor are these.

Horizontal and vertical resolution

Remember the ideal ratio between these two is 4:3, so try to get as close to this as possible. Some examples are 640 x 480, 880 x 656 and 1024 x 768. Most VMG software will require a horizontal and vertical resolution in multiples of 16.

The Screenblaster VMG (Video Mode Generator) software is written by the same team behind the infamous NVDI.

Blowup030 adjusts the screen size as you play with the values, press Undo to return to normal.



See how a larger resolution can display much more information on the screen at once

sending only half the information about a picture to the screen (every other vertical line) on the first redraw, and then fills in the missing lines on the next redraw. The effect created at fast refresh rates of 80 Hz or more is that the eye is fooled into seeing a complete picture.

Video clock speed

If you have a flashy multisync monitor you normally set this to the fastest possible as even on smaller resolutions you benefit from an increased screen refresh (vertical frequency) reducing the strain on your eyes produced from flickering screens. If you only have a standard VGA or fixed frequency monitor this setting will be the critical one, as only the correct combination of resolution and video clock speed will give a picture. The video manager programs help you here by calculating the horizontal and vertical frequencies your video

mode will produce before you try it. Look in your monitors manual to see what frequency ranges your monitor can cope with.

Interlace

If the resolution you are aiming for is quite large (1024 x 768 and over) you will notice that even on the fastest clock speed the vertical frequency is getting quite low. The human eye needs about a 50 Hz refresh, and anything lower will look very uncomfortable, and is quite likely to give you a headache. If this happens you can use Interlacing to double the vertical frequency. This works by

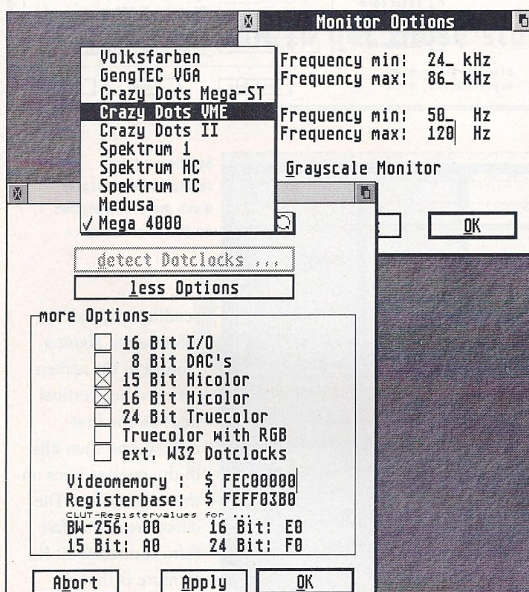
Horizontal and vertical position (Hsync and Vsync).

When you test your chosen video mode the chances are you will need to move the picture to be central. Some monitors automatically centre the picture for you, but even this doesn't change the actual position of the picture your computer is sending out. If you are left with part of the screen cut off at the edge (sometimes seen as a white line where the picture ends) you will have to change these values.

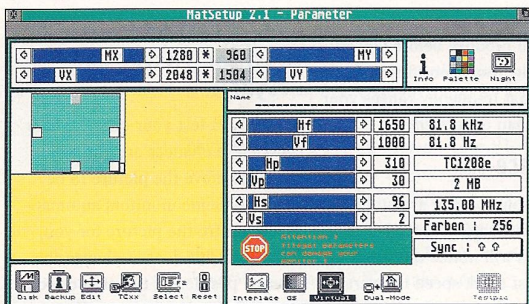
	Interface	Card(s)	Pixel Clock	Possible colours	Highest resolutions	Price	Available from
ST & STE	No standard interface. Graphics adapters have to be soldered onto the motherboard	Multiboard ET4000	up to 90MHz	Mono 16 or 256 32,768 16,777,216	1600 x 1200 * 1152 x 896 * 832 x 624 640 x 480	£299.90 including Multiboard	System Solutions
Mega ST	Mega ST bus slot. Cards plug in usually without any soldering	Mega Vision 4000	up to 90MHz	Mono 16 or 256 32,768 16,777,216	1600 x 1200 * 1152 x 896 * 832 x 624 640 x 480	£279.95	System Solutions
Mega STE	VME slot. Cards plug in, usually without the need to open the computer.	Mega Vision 4000 VME	up to 110MHz	Mono 16 or 256 32,768 16,777,216	1600 x 1200 * 1152 x 896 * 832 x 624 640 x 480	TBA	System Solutions
Mega STE	VME slot. The Card resides in an external box with ribbon cables to the VME.	NOVA VME 16M	up to 90MHz	Mono 16 or 256 32,768 16,777,216	1600 x 1200 * 1088 x 832 800 x 600 640 x 480	£419.00	16:32 Systems
TT	VME slot. Cards plug in, the TT can have up to 4 VME cards connected.	Matrix TC1208e	up to 135MHz	Mono 256 32,768 16,777,216	1600 x 1200 * 1408 x 1056 1152 x 896 832 x 624	£999.00	System Solutions
TT	VME slot. The Card resides in an external box with ribbon cables to the VME.	SuperNOVA	up to 135MHz	Mono 256 32,768 16,777,216	1600 x 1200 * 1408 x 1056 1152 x 896 832 x 624	£899.00	16:32 Systems
Falcon	External hardware fitted to the monitor port. Extra lead connecting to a joystick port.	Screen Blaster 2	up to 50MHz	Mono 16 256 32,768	1024 x 768 * 880 x 656 800 x 560 640 x 480	£69.95	Compo
Falcon	External hardware fitted to the monitor port. Extra lead connecting to a joystick port.	Blowup Hard 1 & 2	up to 50MHz	Mono 16 256 32,768	1024 x 768 * 880 x 656 800 x 560 640 x 480	£49.95 Hard 1 £69.96 Hard 2	System Solutions

* interleaved

A list of currently available graphic hardware - even the ST can have photo quality graphics.



VMG ET4000 supports all cards containing the ET4000 graphic chip - even the mighty Medusa.



The Matrix VMG (Video Mode Generator) program has a very comprehensive array of video adjustments.

And the rest?

If your machine is either an ST/STE, a Mega ST/STE or a TT, you will need to add a graphics card to it in order to boost the graphic potential. Take a look at the chart to see what graphics cards we know are currently available. Remember that the standard ST casing isn't usually large enough to house a graphics card, so you may need to re-case your ST into a Desktopper or tower casing. Once your machine is re-cased we recommend that you also consider the various processor accelerators available, otherwise you will soon see the computer slowing down when you start playing with colourful pictures.

All of the graphics cards in our chart will give the ST, Mega or TT better graphic resolutions than even a Falcon with Screenblaster or Blowup, this is because the video clocks found on these boards far exceed 50MHz. As well as faster clocks, these boards also contain video ram and extra graphic processor chips. This means not only better resolutions, but also more colours and speed on the screen. Each board has one central chip which accepts the commands from the computer and the most common chip is the ET4000 graphics chip. The ET4000 can be found on graphic cards like Crazy Dots, Mega Vision 4000 and even on the card inside the Medusa.

Pixel colour

OK, enough about resolutions - let's take a look at some colours. The standard ST can only display up to a maximum of 16 colours simultaneously, and these 16 colours can be chosen from a palette of 512. The STE improved on this a bit by giving us 4096 colours in our palette, but still with only 16 colours on screen at once.

The amount of colours we would ideally like to have is 256 shades of red, 256 shades of green, and 256 shades of blue as our eyes cannot distinguish between any more than this. This would give us 16.7 million possible combinations of colour to choose from, and allow us to view pictures on the screen as if they were photographs.

A computer builds up colours in layers called bitplanes, in a similar way to how a comic book artist will put layers of different drawings on clear film over each other, to produce a complete picture. The more bitplanes the computer has, the more colours it can show on screen simultaneously. To work out how many colours we can display on the screen at once we need to use the following formula:

Colours = 2 to the power n (where n = the number of bitplanes)

Bits and planes

Here is a table of possible bitplanes and colours.

Bitplanes	Colours
1	2
2	4
4	16
8	256
15	32,768
16	65,536
24	16,777,216

Colour categories

All of the possible combinations of bitplanes fall into their own colour category. It is a good idea to learn how each category of colour works, and to help you with this we have summarised the differences between them.

Palette modes

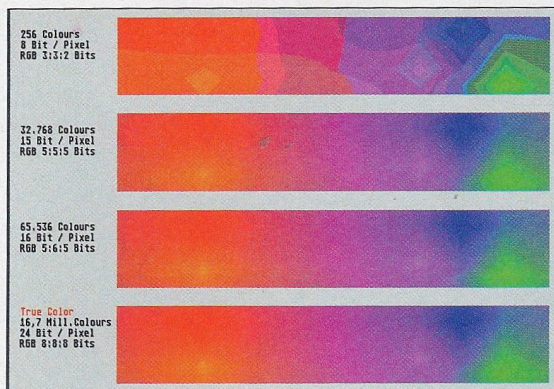
If we are using 2, 4 or 8-bitplanes, this is known as a palette mode because each colour on the screen is always picked from a larger palette. In 8-bitplanes we have 256 colours on the screen chosen from a palette of up to 16.7 million colours. To make up for the lack of on screen colours when we need to show photographic pictures, a dithering effect is normally used to give the illusion of more colours. When we only have 1-bitplane this is known as monochrome or duochrome, with the difference being that with duochrome you can choose the two colours on the screen from a palette.

Greyscale mode

If we have 8 bitplanes we can set each of the 256 colours to a different shade of grey. With this many shades of grey we can now show a lifelike representation of a black and white photograph on screen. Remember the human eye will not see the differences between so many shades of the same colour (in this case grey).

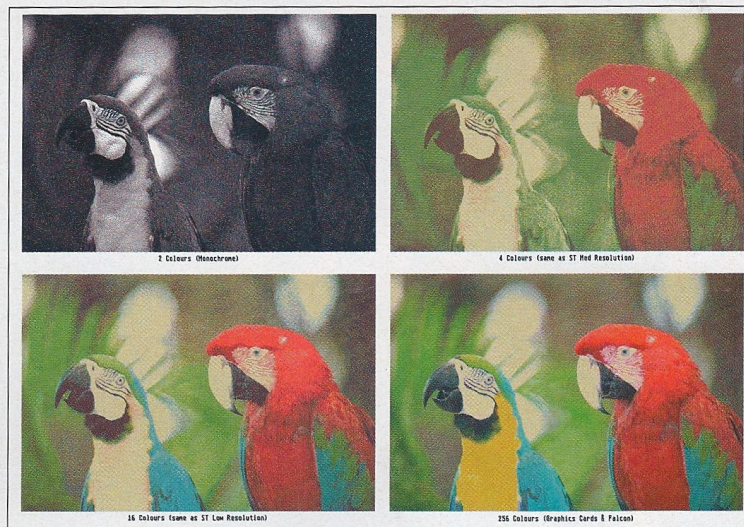
High and true colour modes

The remaining bitplane combinations (15, 16 and 24-bit) do not have a palette of colours to choose from. Instead the available bitplanes are split up into three smaller groups, each one containing either red, green or blue information. Take a look at the four coloured bars to see the effect. Note that in the True Colour mode (24-bit), with 8 bit (256 shades) of red, green and blue, all of the colours blend smoothly



High and true colour modes. The future is bright! The future is 256 shades of orange!

Palette modes using a Floyd Steinberg dithering effect you can give the impression of more colours.



Software

With every good piece of hardware goes an equally good piece of software. NVDI has made its name with all serious Atari users as *the* software screen accelerator. Well you might be surprised to know that almost all Atari graphics cards have their own very special version of NVDI.

Programs that use 24-bit displays

DA's Layout TC
DA's Vector (Pro)
DA's Picture
DA's Repro
Calamus SL
MagiC
Ease
Imagecopy 4
Chagall
GT Look II
GEM-View
Xenomorph 2
Pixart
Prism Paint 1.5
Scan IT
TMS Studio

The main difference here, is that not only is it used to speed up screen drawing, but to also interpret the graphic commands from the Atari to the graphics card. With NVDI installed, all of the well written programs on the Atari will work in the new resolution, and some even make full use of all the available colours displayed on it. To finish off, here is a list of programs I have found to work on these graphics cards, and the important ones that don't.

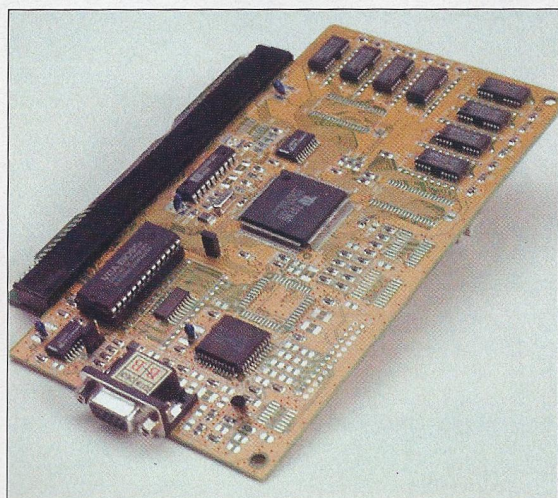
More and more software programmers on the Atari are writing very well-written programs, taking into account the wealth of extra hardware that can be added to existing machines. If you are not sure about your favourite software working on large monitors, or with more colours, be sure to give a call first to one of the dealers listed in the chart to discuss your requirements.

Programs that work with 8-bit displays

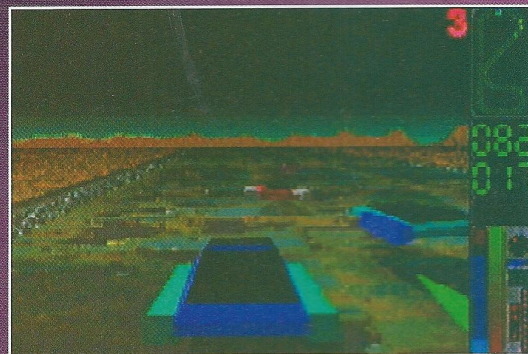
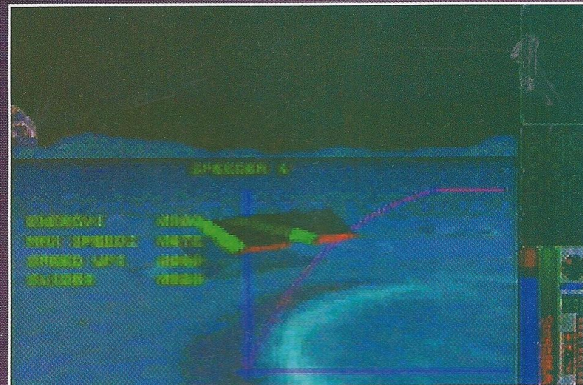
All programs in above 24-bit list plus:
CAB Web Browser
CixComm
Coma
Connect
Octopus BBS
STraight Fax 2.2
Convector Pro
Pagestream 2.2
Papyrus Gold
Twist
Atari Works
1st Word Plus
Protext 6.61
E-Copy
Fastcopy Pro
Knife ST
Kobold
Diamond Back 3
Diamond Edge
ST Zip
LHare Shell
Idealist 3.6
Everest 3.5
WinX
Midnight 2 screensaver
Twilight screensaver
Linux
Notator Logic 2.1

Programs that don't work with graphics cards in colour

Notator SL
Cubase 3.1 onwards (Cubase 3.02 works)
Oasis
Calamus 1.09n (works in mono only)
Arabesque Pro (works in mono only)
Avant Vector (works in mono only)
LED Panel v3.0



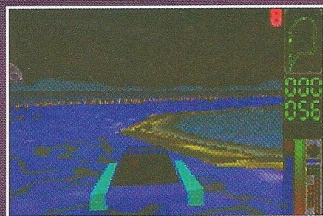
MOON SPEEDER



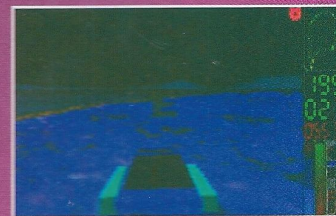
MOONSPEEDER ALLOWS YOU TO NEGOTIATE HAIRPIN BENDS
AND COMMIT YOURSELF TO HIGH FLYING LEAPS IN THE RACE
FOR THE ULTIMATE
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I WOULD LIKE TO ORDER A COPY OF MOONSPEEDER FOR MY FALCON AND ENCLOSE A CHEQUE/ P.O./ CREDIT CARD
NUMBER FOR £29.95

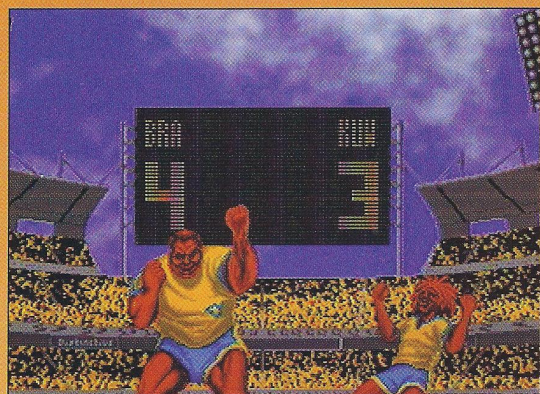
NAME:..... CHEQUES TO BE MADE PAYABLE TO MERLIN

ADDRESS:.....

CREDIT CARD No:..... EXPIRY DATE: .../... SIGNATURE:.....

Jungle fever...

Nial Grimes rises through a haze of Night Nurse and Lemsip to bring you news of Fever Pitch Soccer – the Jaguar's answer to Match of the Day. Be warned, Paracetamol does strange things to this man...



The cut scenes are a bit of a let down after the detailed in-game graphics.

Soccer games are something of a phenomenon. No matter whether you love or loathe the sport itself, sit down with a good football game and it's virtually guaranteed that you will be yelling for the referee and shouting abuse at the other players within a matter of minutes. Naturally, this magical transformation from mild-mannered Jaguar owner into hot-blooded European striker takes a particular type of soccer game. Sensible certainly hit home in the atmosphere and playability stakes,



A few fouls are par for the course – if you can't tackle cleanly, stick a boot in!

but it's hardly an ideal demonstration of the silicon monster we know as the Jaguar. Let me introduce you to Fever Pitch Soccer. We're talking arcade soccer action here. Pick your team, grab your controller and get ready to rock your way around the world, playing solo or against another human player. It's a purely arcade affair – so long as you keep smashing the goals home you can expect to appear in the next round. Having been conditioned by Sensible over the years, the first thing that strikes you about Fever Pitch is the perspective on the field – the usual overhead approach has been ditched in favour of a raised side-on view. This

allows larger players to be used and also gives the ball a much more realistic feel, because you can actually see how high it is. There's always a danger that control will be lost in fiddling too much with the legendary Sensi formula, but that's one concern that you can dismiss – this game is a real demon to play.

Passes, strikes and tackles are all a piece of cake to perform, with after-touch available if necessary, and in line with the arcade philosophy, that ball stays super-glued to your players' feet until you pass or get tackled. And that's another thing you should understand about Fever Pitch; things can get a little bit rowdy on the standard "aggro" setting. It's never quite reaches a Brutal Sports plane you understand, but a few barges, kicks and full on attacks are par for the course. And don't feel too bad about bending the rules, because the computer controlled teams are only too pleased to return the favour (referee!).

Playability is king as far as soccer games are concerned, but Fever Pitch is a lot more graphically reassuring than Sensible during the initial "is this really a Jaguar game?" phase. The players and various pitch surfaces are nicely detailed and the animation is competent too – for instance players bob up and down, gulping air, after a long run. It's only when you hit the cut-scenes that you really notice the game's 16-bit heritage. The overall atmosphere of the game is kept buoyant by a myriad of different sound effects. Crashes, thuds and cries echo above the sound of the riotous crowd and the ever-



The pitch surface changes as you progress through the world tournament.

present klaxons. The only exception to this rule is the sound produced when you power-shoot the ball, which sounds like a leftover from Ultra Vortek – kerrunch!

Generally though, the presentation is good enough to carry a very playable soccer experience. As a man versus machine game, Fever Pitch is great, but grab another player and suddenly the blood starts pumping and it mutates into the sort of game that your mother warned you about (or would do, if she wasn't so completely stuck on level 66 of Tempest 2000). To quote Scott of the Antarctic, "it's cool".



Fake players are given a name-check at the bottom of the screen (I deny all responsibility for this one!).

Publisher: Atari Contact: 01753 533344 Price: £TBA	Requirements: Jaguar Pros: Fast action • good controls • playable Cons: Tired cut-screens • no league play
SCORE: 8	

IMAGE



POSITIVE

24 Bit Image Processing for any Atari...

- ◆ Supports all ST, TT and Falcon screen resolutions.
- ◆ Allows the editing of 24-bit True Colour graphics on an ordinary ST!
- ◆ Compatible with GDOS, SpeedoGDOS, NVDI 3, GEM compliant graphics cards, ScreenBlaster, BlowUp030, virtual memory drivers, TT Fast RAM, Multi-TOS, Geneva, MagiC, MagiC Mac and Gemulator.
- ◆ Powerful block handling includes the choice of 11 different overlay methods with variable transparency.
- ◆ Supports the creation of 3D 'random dot' stereograms and foreground 'enhanced' stereograms.
- ◆ Uses the Falcon's DSP for processor intensive tasks and JPEG decoding.
- ◆ Outputs to most popular models of colour and monochrome dot matrix, inkjet and laser printers.
- ◆ Images can be rotated to any angle in clockwise and anti-clockwise directions, to an accuracy of one degree.

- ◆ Images can be rescaled up to more than 400% of original size without noticeable loss of quality.
- ◆ Images can be printed to disk if memory is low, then printed directly from the GEM Desktop.
- ◆ Numerous useful image processing filters are included, along with the ability to create your own.
- ◆ Supports 256 level (8-bit) masking. Includes a configurable gradient tool to aid mask creation.
- ◆ Allows processing of user defined areas (both regular and irregular) without affecting other parts of the image.
- ◆ Includes a number of localised retouching tools with full user configurability.

Positive Image requires at least 1 Mb of memory. A hard drive is recommended, though not essential. For a limited period, we are offering the package at an introductory price of just £65 (normal price £79) plus postage and packing (UK - £2.00, Europe - £5.00, rest of world £10.00). Payment in UK currency only - credit card or banker's draft preferred. Overseas customers, check first to see if we have a distributor in your country. A usable demo version is available from Floppyshop for just £1.00.

Floppyshop

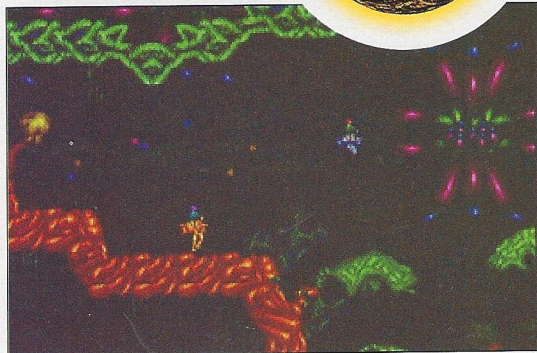
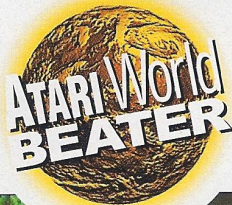
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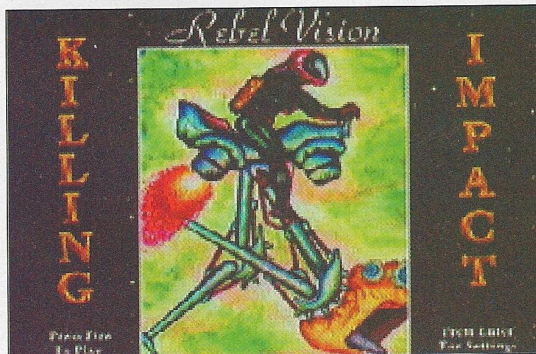
Killing

Remember Joust? Graeme Rutt does, and pays it a revisit in this Falcon only game.



Up to four players can take part in Killing Impact.

I'm sure you must remember the old arcade game, Joust. You know, birds, eggs, pterodactyls and things? The fire button flapped the wings, you killed things by bouncing on them and got killed if they bounced on you. If you don't remember it, ask a friend who's at least as aged as me - they'll probably lapse into sickly sweet nostalgia and start talking about



Killing Impact boasts Joust-inspired gameplay along with colourful graphics and slick presentation.

Galaxians, M.U.L.E and The Tale of Beta Lyrae. But forget those old classics, we're talking about Killing Impact and Killing Impact is Joust for the new generation.

Set in a scrolling platform type environment you move via bursts of your engines (flapping) and land on things to kill them. As you move around the screen scrolls in all four directions and a host of different creatures come after your blood.

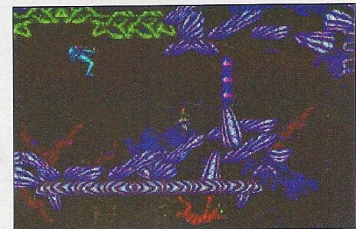
Kill enough creatures and walls open up giving you access to the next area. Kill the end-of-level meanie and you go onto the next level.

So yes, it's a standard platform game with Joust-like controls. It even has bonuses scattered about to enable you to freeze or laser meanies or get an extra life. The twist here is that it's Falcon-only, it uses the whole range of Falcon features to give the player a quite extraordinary game.

The graphics, using 256 colour screen mode, are pretty amazing - probably the best I've seen on any Atari machine (apart from the Jaguar, natch). In particular the backdrops are breathtaking but the creatures aren't exactly poorly depicted either - it's very hard to fault the graphics in this game. The scrolling is *really* smooth, the animations are well done and there seems to be no speed penalty to pay.

The sound is pretty awesome too. Some major-league DSP hackery gives the Falcon 'synthetic' sound - the instruments are built up out of sound waves rather than memory hogging sound samples. This means you can have a lot of music in not much memory. Up to 20 instrument tracks can play at the same time and there are 28 different songs in the game. On top of this are the sampled drums and game samples. All this adds up to some truly brilliant aural delights.

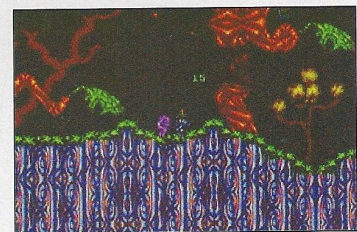
The game is a lot of fun to play. There are three levels with three different types of scenery in each. They vary in size from quite large to very large and have secret passageways, icy patches, bouncing ground and so on which helps to vary the game play. You have five lives and when you lose one you start again in the same position. There's even a multi-player mode (up to 4 players, the game can use Jaguar Joypads as well as normal joysticks) which is co-operative in nature - you don't fight against each other.



A set number of monsters need to be flattened before you can move through the door to the next sector.

So what can I say against the game? Not very much. If I were being churlish I could say that the presentation is a little lacking or that once played you *might* not want to play it again. However, my only real complaint against the game is that there's no save game facility (that I could find) - which means you have to start from the beginning every time. That's a bit of a pain but not enough of one to get too heavy about.

Don't get me wrong, if Killing Impact appeared on the Jaguar it'd have to be damn good or it'd soon get labelled 'just another platformer'. As it is it's on the Falcon, it works on any monitor (VGA or RGB), it's beautiful to look at, sounds great and is fun to play. It is, quite frankly, the best game released on the Falcon to date. If you want something to play or maybe you're thinking about Christmas presents for the kids, the £29.00 price tag is well worth it. Recommended highly.



The bigger the monster, the better the score - toughies usually reveal a power-up too.

KILLING IMPACT

Publisher: Digital Concept
UK Distribution: Merlin Software
Price: £29
Requirements: Atari Falcon 4MB, Jaguar Joypads for 3/4

Player Mode.
Pros: The best Falcon game to date • 4 player mode • 256 colours
Cons: No game save • pricey



SCORE: 9

Platon

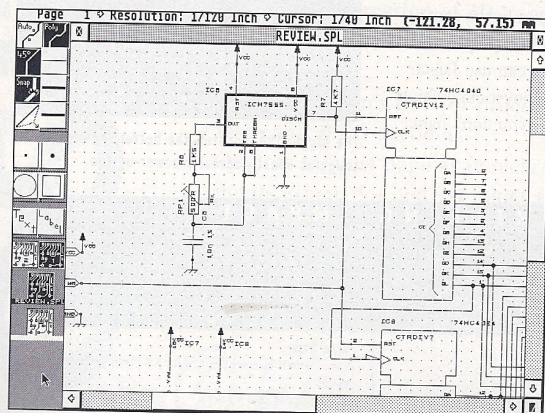
If you thought computer-aided design was all about drawing your dream kitchen, you've obviously never heard of Platon. Jon Ellis arranges the chips...

Hands up everyone who has tinkered with electronics at one time or another. Burnt fingers from clumsily soldering transistors onto Veroboard were an essential part of school Technology or Craft and Design courses for many of us. Trouble is, if you got keen on electronics and wanted to move on to complex projects, one of the many awkward problems to be overcome was the production of a printed circuit board for your latest design. Even a fairly simple board could absorb hours of time playing with fiddly mylar tape and transfers to make a master transparency.

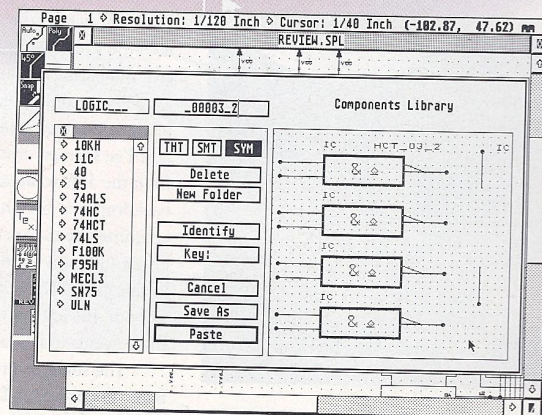
Of course, the professionals in industry don't do it this way - they use complex computer-aided design systems to produce circuit boards quickly and accurately. With the aid of VHF Computer's PCB design package, Platon, you can access the same technology on your ST. This is no hobbyist market toy software either - VHF sell the same package running on some very serious platforms: Sun Sparcstation, NeXT and the PC to name but three.

Better by design

The design process starts with the generation of a circuit diagram, or



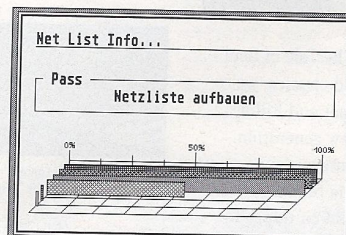
Draw your circuit diagrams using symbols from the library.



Whatever component you need, chances are it's in the library.

schematic. To assist with this process, Platon includes a *huge* library of pre-drawn circuit components. Not only are all the basic discrete components present (resistor, capacitor, diode and so on), but so are most of the standard logic chips and other semiconductors. Should the component you want not be present, it's easy enough to add it to the library. In most cases though, all the component symbols can simply be pulled out of the library and wired together.

Having drawn your circuit diagram, perhaps spanning several pages, the next stage is to have Platon analyse the connections between the individual components. This generates a data file, called the net-list, which is needed for creating the PCB. During this phase, the program will warn you of errors or



While Platon makes the net-list, you get to watch this excellent 3D progress bar!

potential problems such as unconnected chip pins.

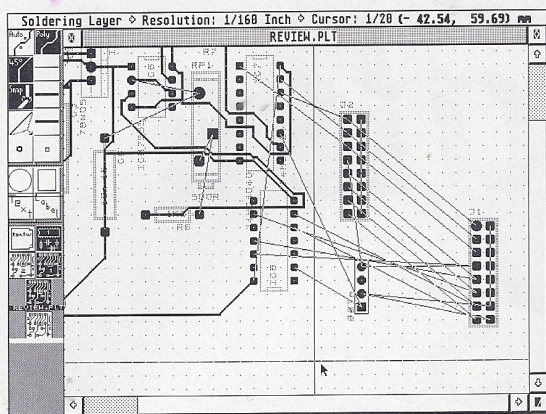
Once the program understands the connectivity of the circuit, you can begin the construction of the circuit board. Platon takes each component in turn, and asks you to select a physical representation and place it on the

board. Once again, the sheer scope of the library comes to the rescue, as virtually every available component outline is only a couple of mouse clicks away. In terms of chip packages, standard DIL, surface mount, PLCC and PGA styles are all supported. When the components are placed, Platon automatically joins up connected pins with straight lines, forming the traditional rat's nest display.

Components can be picked up and moved at this stage to produce the optimal layout.

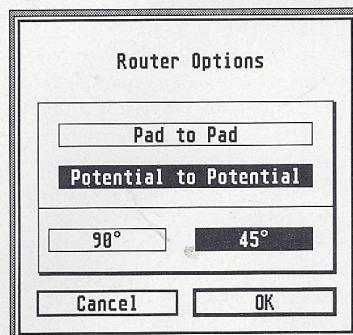
The final step in the process is the conversion of the rats nest of direct connections between components into real PCB tracks. The basic version of Platon offers a choice between laying the tracks manually, or using an interactive autorouter. Don't expect too much from the autorouter though - it's easy to confuse and it can produce some very counterintuitive routing decisions. Far better performance should be expected from the fiendishly expensive optional Bartels autorouter module (not included in the review system), which offers full rip-up-and-retry autorouting including multilayer boards.

When you're finished, you can quality control the final board through the design rule checker, which allows you to specify the minimum track width, clearance between pads and nearby tracks, and so on. Of course, none of this is any use



Turning the rat's nest into PCB tracks

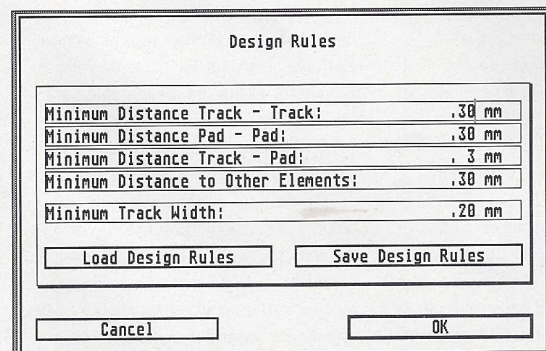
unless you can print out your designs. Platon supports a full range of common printers (9 and 24 pin dot matrix, inkjet and laser) along with plotter and metafile output. Postscript is available through an optional add-on module. Printing is rapid and even on an elderly HP Deskjet, of excellent quality.



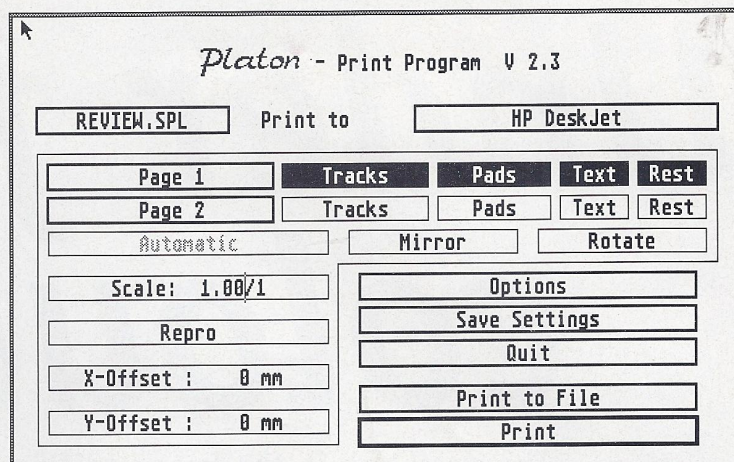
The autorouter is rather limited in its configuration options...

This is a shame, because the 420-page manual is a real quality job: nicely laid out and copiously illustrated.

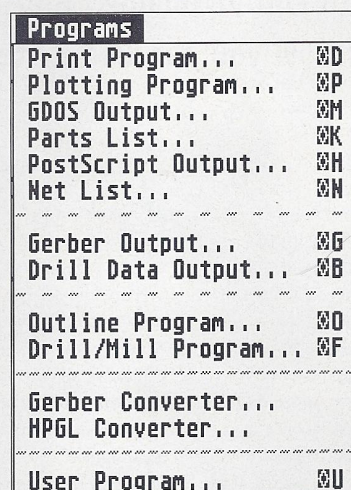
Don't let the language barrier put you off though - all the programs in the package come with English resource files. Furthermore, the documentation is so well littered with screen grabs that figuring out how to get things done is not too hard. Even if, like me, your German is limited to ordering two beers and saying 'Good morning', you should be able to successfully follow the excellent tutorial chapters. After all, 'Klicken Sie das Icon mit der rechten Maustaste' doesn't take a great deal of translation!



Set your own design rules for the checker



Printing is easy, and very flexible.

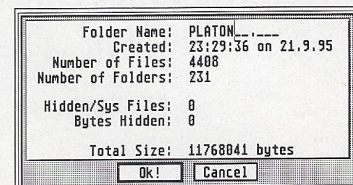


There's lots of optional extra modules for special applications.

Platon is demanding in its hardware requirements. A 2Mb STE/TT/Falcon with a hard disk and a high-resolution display (640 by 400 or better) is the bare minimum. For any serious work, 4 Mb or even more RAM will be needed, particularly if you want to work in colour. Allow lots of hard disk space too, as even a basic installation occupies nearly 12 Mb (mostly due to the component library).

Warts 'n' all

Putting Platon's awesome functionality to one side for a moment, the package does have some flaws. The interface used by the main drawing program is rather dated and cumbersome at times. There are no major problems, more a collection of little niggles. For example, the icons in the

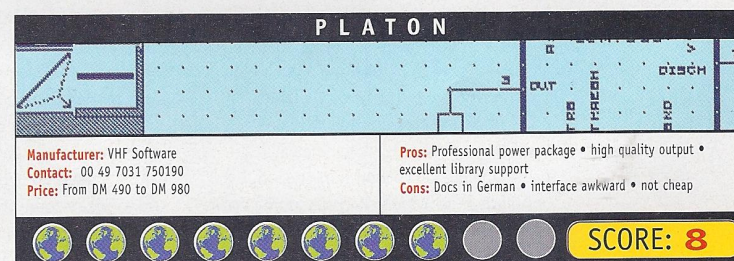


And this is just a basic setup!

toolbox at the left of the screen are too easily moved by mistake when you try to click on them. Their redrawing is also a little hit and miss, though that of the main working window is fine, particularly when NVDI is used.

Changing from editing a circuit diagram to working with a PCB layout is accomplished by loading a new configuration file from disk - surely a slicker system could have been devised? Similarly, changing the zoom setting on the main window requires the navigation of two levels of pop-up menu, rather than a quick rubber-banding of the area of interest as in many specialised drawing packages. Editing of poorly auto-routed tracks is also a pain.

Despite all this, Platon is a clear winner because it does the job it sets out to do, and does it very well. It's not cheap (good PCB CAD software rarely is), but if you want to do PCB design on the ST, there's no other package that comes close.



Under false colours

The weak link in the image editing chain is the monitor display, especially with colour images. Gunter Minnerup explains the issues involved, and how you can use different screen modes to cheat the system.

The tools and techniques introduced last month to improve the quality of slightly dodgy scans can, of course, also be used in much more ambitious projects, but before we can seriously think of tackling the more involved image editing jobs we need to understand a little bit more about the technicalities of how images are represented on the computer screen. If we all had 24-bit true-colour monitors this would be less of a necessity perhaps, but most of us impecunious Atari people can ill afford such marvels and have to make do with monochrome or low resolution colour monitors, even colour televisions. Sixteen colours is about all we can hope to see on screen, even if the scanner delivers 16 million colours.

Deception

Thankfully, the human eye is easily deceived. The truth is that even glossy colour magazines only use four different printing colours - cyan, magenta, yellow and black - to reproduce quality photographs, and they do this by arranging the dots on each of the four colours in cleverly designed patterns, one colour on top of the other so that they become blurred to the naked eye and merge into millions of hues and shades. If printers can do that with only four colours, then it stands to reason that a computer monitor should be able to manage a respectable picture using a grand total of sixteen colours, and indeed it does. The only trouble is that glossy magazines are printed using very small dots indeed, by comparison to which the individual pixels of the screen are incredibly coarse, and also rather few in number: 320 by 200 in

ST low resolution, and 640 by 480 on a TT or Falcon.

The screenshots for this series were prepared on a TT in medium resolution, yielding $640 \times 480 = 307,200$ pixels. Arranging the maximum of 16 available colours in all conceivable patterns to create the illusion of different colours requires a pixel matrix of 16×16 , giving a maximum of 256 "dithered" colours. This is enough to give a reasonable representation of a colour photograph but still nowhere near its actual colour content, and there is a further drawback: since each square of 16×16 pixels effectively represents one picture dot, the on-screen image becomes far coarser in the process, losing much of the detail of the original.

Pixel patterns

It stands to reason that editing such a picture on such a screen is a bit of a hit-and-miss affair and you would not want to even attempt it if the final output was to a high-resolution imagesetter. For the comparatively low resolution colour printers in home use, however, satisfactory results may be achieved after some trial and error. Greyscale pictures are a different matter, however, as the 256 possible shades are quite well represented on the monitor, despite the coarseness introduced by dithering.

Remember that all this only applies to the monitor image and that image editing software will apply all operations to the actual file in its full glory. The ability of most programs to give you different dither modes on screen is useful because it allows you to make some trade-offs between colour depth and sharpness of detail: switching from a 4×4 to a 6×6 or 16×16

pattern, for example, will increase the number of colours or greys discernible but blur the fine detail. You could, therefore, switch between dither modes at different stages of the editing process to suit the task at hand, without affecting the actual picture data.

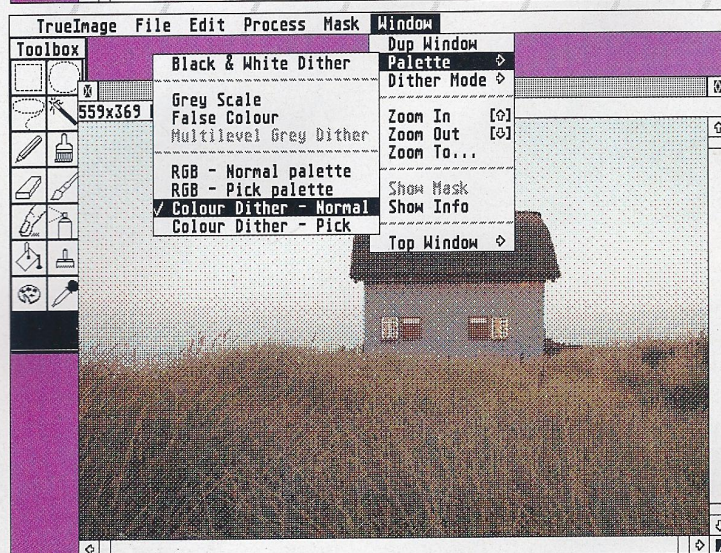
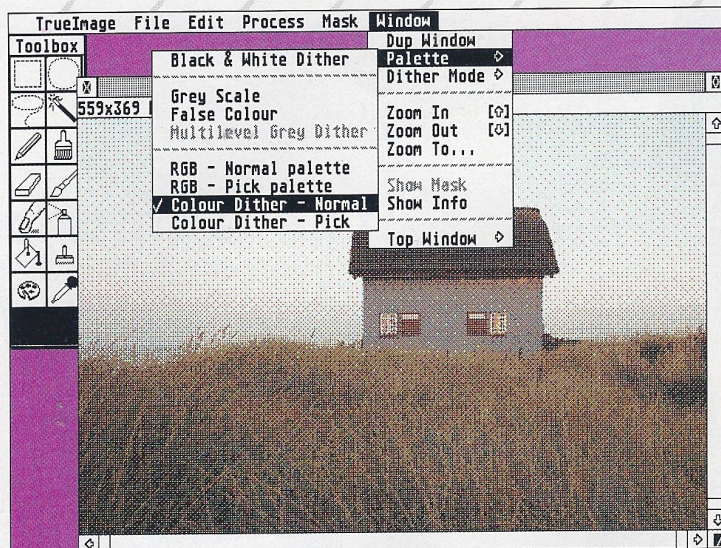
Some dither modes simulate the screen patterns used by monochrome printers to generate the illusion of grey shades. Because of the size of the screen pixels, the patterns created by such "halftoning" can appear much more intrusive than they will be in the much finer printer dots. If you convert such a "halftoned" image to a monochrome bitmap, the dither pattern is saved with the picture data and what you see on screen will be (more or less) what you get in print. Don't do this before you have finished editing, though.

Picking palettes

There are other ways of affecting the on-screen appearance without changing the actual image data, and these can also be helpful in overcoming the basic limitations of an inadequate video system. Don't forget that the 16 basic colours used represent a palette chosen from a much larger variety, and changing the palette can help bring out details while still remaining within the insuperable limitation of 16 colours.

TrueImage, for example, lets you switch from a standard palette to what it calls a "picked" palette, where the 16 colours are selected to reflect their prominence in the image. A predominantly greenish image, for example, will get a palette with more different shades of green among the 16, and therefore be able to display more detail in the green areas.

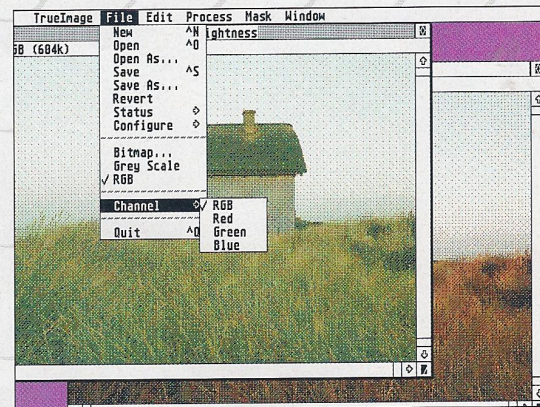
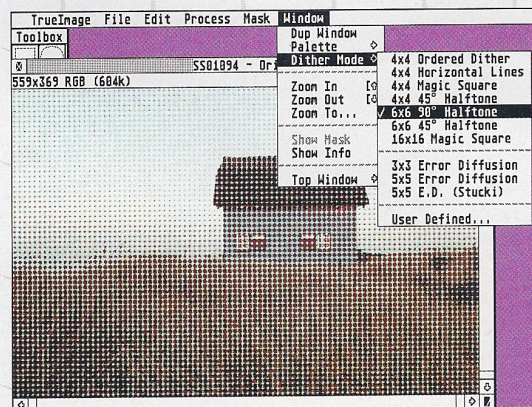
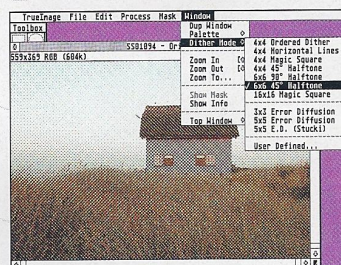
Similarly, "False Colour" will replace



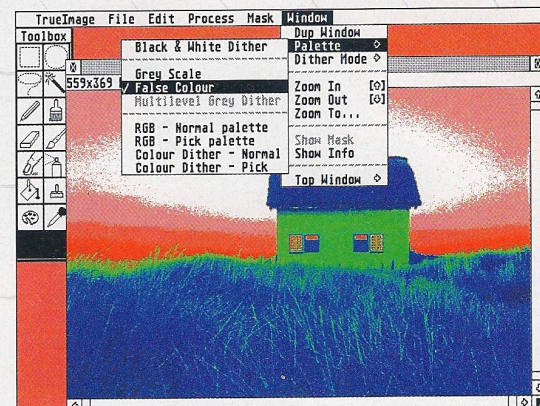
See the difference a "picked" palette makes over a standard one: closely tailored to the blue and grey shades prevalent in the picture, the "picked" palette renders more details in these areas (the grass).

the natural colours with somewhat psychedelic, highly contrasting artificial colours. This makes the picture look very weird indeed but emphasises details that are obscured by similar, adjacent colours. Masking, for example, can be a great deal easier in "false colours".

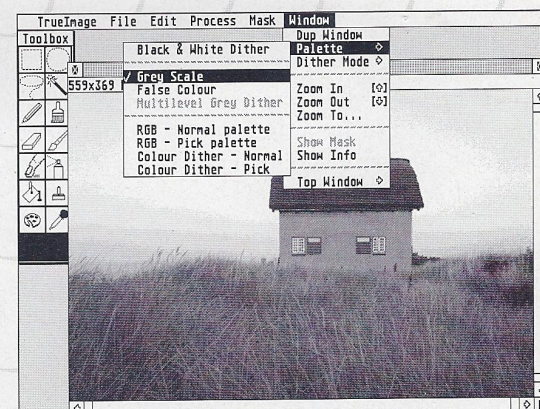
You may well like the strange effects that can be produced in some of these screen modes, but as they affect the screen only you would be disappointed if you attempted to preserve them by simply saving the file to disk. The painting tools, however, can be used to change the colours permanently, and even to colourise a greyscale picture. But this takes us into the creative territory which, armed with a basic understanding of the difference between image data and their on-screen representation as outlined today, we shall tackle in next month's article.



RGB images consist of three different colour "channels" for red, green and blue which can be edited separately: here the green channel has had its brightness increased significantly, while the other channels remained unchanged.



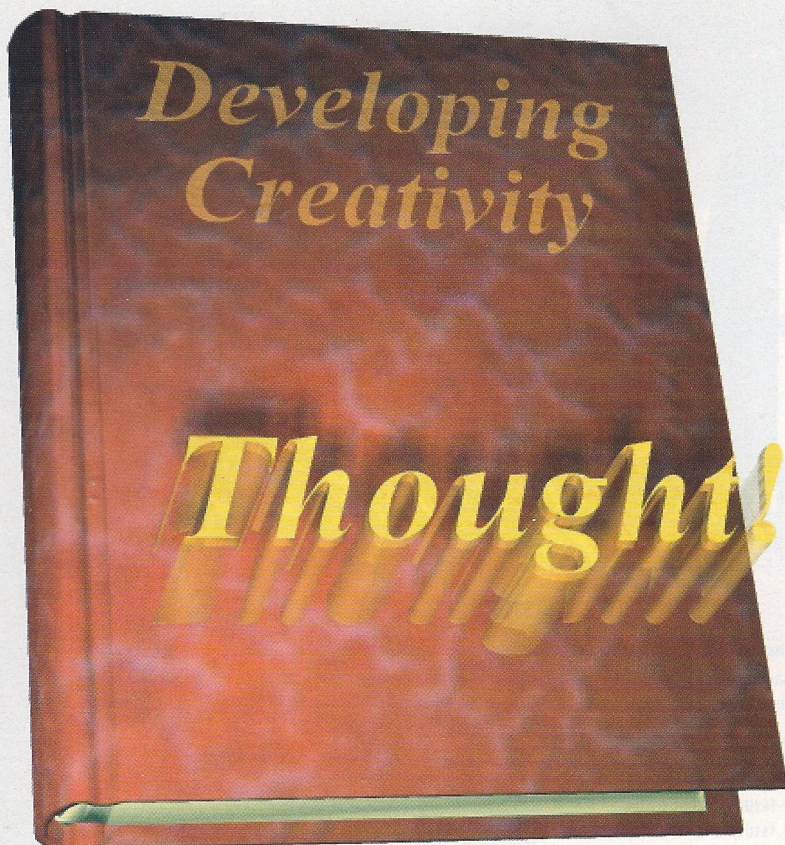
"False colour" palettes can be rather wonderful but they serve a highly practical purpose: to bring out detail which may be blurred by similar, adjacent colours.



Switching to greyscale display does not affect the truecolour picture data but gives a sharper, more detailed picture. Good for picking out individual elements such as the window panes in this example.

(left above and left)

The 6*6 halftone dither at a screen angle of 45 degrees or 90 degrees looks less impressive on the monitor than the default mode, but is much closer to what the image would look like printed by a laser (without the colour, of course, unless you're very rich).



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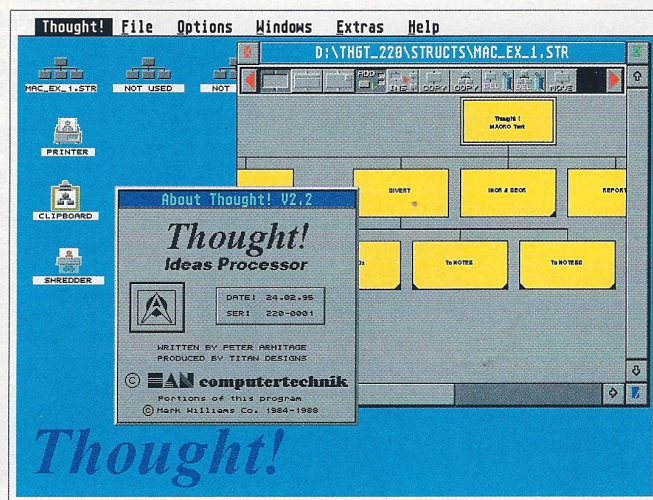
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etc.

When launched another program, this exits **Thought!** and automatically loads a file that is associated with the task. After editing the file, you return to **Thought!** simply by exiting the launched program.

Finally, any number of these linked files can be compiled into a complete script, printed or viewed on-screen. In addition to the powerful nature of **Thought!** many other desirable features are included; Drag and Drop, Fly Dials, Auto Save/Backup, customisable colour support for TT and Falcon users, Speedo, NVDI and MultiTOS compatibility, etc.

Thought! is supplied on two disks containing full FontGDOS support, along with a very comprehensive 168 page manual.



Communications for Dummies

What is communications? Why and how do you do it? The Atari World team brings you the facts.

The exciting world of communications is open to every Atari owner. You don't need a powerful system – a humble 520 and a colour TV will do. This month we look at just exactly how you go about buying, installing and using a modem – the essential bit of kit that allows you to connect your Atari to the outside world via a telephone line. We will show you in the simplest of terms what you can achieve and how. Before charging off into the exciting world of World Wide Web let's start with a little bit of history.

Modems' first usage was to transfer data between large mainframe computers. They were very slow by today's standards sending 300 bits of data per second (baud) compared with today's speeds of 28,800 baud.

The next stage was accessing mainframe computers via dumb terminals and by the early personal computers. New standards were established that still exist in some backwaters of technology (such as home banking) today. Because access was by a terminal with no intelligence the need to send data to it was important. However data could only be sent back as fast as the operator could type. Hence the modems used by these terminals received data at 1200 baud but sent it at only 75 baud – quite fast enough for your average typist! If you here the word Prestel associated with communications then this is part of it.



Modems got faster and split off completely from computers with the advent of the fax. Whilst the technology behind fax machines might be quite horrible, they were so easy to operate and so practical for every day business (and home) use of the fax became an essential business tool quickly making telex obsolete.

Parallel to fax was the rapid development of bulletin board systems (BBS) as a service provided from and for the private sector/hobbyist, The Internet for education and US military use and Janet for UK educational establishments. These services allowed information to be shared, discussions groups, electronic mail, sources of support and centrally held archives from which to download files.

Today, there is much excitement about the 'new' World Wide Web. Even this is accessible to the humblest ST owner thanks to the new software on this month's Atari World reader disk. But just what is

this World Wide Web all about? It has basically two components. One is the network of computers that form The Internet. The second is a means of accessing them using a graphical user interface. But wait a moment - the ST has a graphical user interface and that was about in 1985. You've got it - the World Wide Web is to communications what the Atari ST was to computers - a graphical user interface to information - communications technology has finally caught up with the ST!

So what is a modem going to do for me or am I just signing up for huge phone bills? That of course depends on you. Yes it is quite possible your friends will be complaining you are always on the phone - until the first phone bill arrives after your new modem purchase makes you re-evaluate your usage. But if you use your modem judiciously, plan what you are going on-line for and follow our advice about using Off Line readers in our section

File Edit Settings Options Dial BackTALK™ Help

STalker™: CIX 18th July 01:05

ATX400
OK
ATDT912101812961255#
CONNECT 9600

Annex Command Line Interpreter * Copyright 1991 Xylogics, Inc.

Type 'cix' at the 'login' prompt to get started.

Port 21, TS1.

login: cix
UNIX System V Release 3.2.0 i386
gonzales
Copyright (c) 1984 AT&T
All Rights Reserved

Welcome to - The Compulink Information eXchange

```

      XXXXX  XXXXXX  XX  XX
    XXXXXXXX  XX  XX  XX
      XX  XX  XX  XX  XX
      XX  XX  XX  XXX
    XX  XX  XX  XX  XX
  XXXXXXXX  XX  XX  XX
  XXXXX  XXXXXX  XX  XX

```

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Sundial Court
Surbiton
KT5 9RN

Voice: 0181 296 9666

V21 to V34 modem bank:	0181 296 1255
Dataflex V24 ISDN TA V110:	0181 335 4139
Hayes V24 ISDN TA V120:	0181 335 3845
PSS:	2342 1330 0310
Internet:	telnet to cix.compulink.co.uk

Type "qix" instead of "cix" and this screen will not be displayed

CIX Version 2.26 17/07/95

Copyright (c) CoSy Conferencing System, University of Guelph, 1984

Portions copyright (c) Compulink Information eXchange Ltd, 1985-1995

You are on line: AE/AFEs

Nickname? (Enter 'new' for new user)

A successful login to
CIX - is it always so
easy?

on accessing BBS systems you will probably be surprised at how little it all costs.

All you need

A modem operates by converting information from the computer to which it is connected into audible sounds (tones). These tones are sent down a telephone line to another modem (remote modem) which converts them back into information. Similar tones are received from the remote modem and converted back into useful information by your

modem. This process is called **Modulation** and **Demodulation** hence the term '**modem**'.

In addition a modern modem can automatically dial a telephone number or answer an incoming call when required. Whilst a call is in progress certain features are brought into play to ensure fast, reliable operation. Error correction continuously monitors the transferred information and, if corruption occurs, perhaps caused by a poor telephone line, this is automatically detected and the information that was corrupted is resent. Data compression reduces the call

duration by altering the information so that it takes up less space and can be transmitted faster.

A modem is very similar to a printer in the way that it is controlled. A printers' function is controlled by means of 'escape codes'. These are special codes sent by software to the printer to, for instance, change font or print in bold. Similar codes have to be sent to the modem to for example answer the phone line or to send data at a certain speed. When you print to a printer all these codes are handled by a printer driver. Similarly the communications software you use on your

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Signature _____ Date ____ / ____ / ____

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ST should handle the vast majority, if not all of these codes automatically.

Modems are however much more standard than printers. Different printers need different printer drivers in order to print. Most modems (including all known modern modems) use an industry standard command set called the AT or Hayes command set. The only time you are likely to need to use the command set is if your modem has particular advanced or unusual features that you want to access that are not supported as standard by the software that you are using.

Connecting a modem.

A modem connects to your ST via the serial port. On an ordinary STFM, STe or Mega ST this is an (old) standard 25 pin D connector. In the newer Mega STe, TT and Falcon this is the (more modern) standard 9 pin D connector. When you are buying the modem try and get it supplied with a cable with the right connector. If not you can buy a 'standard' modem cable suitable for a PC with the right sized connector - this should work fine on any Atari.

Next comes the cable from the modem to telephone jack. This should also be supplied as standard with your modem. Beware if it is not - cables with the appropriate connectors can be wired internally quite differently for different applications. Hence if you have to buy this cable separately make it quite clear it is

for use in conjunction with a modem.

Finally you have the option of connecting a telephone to the modem. This can be useful either because you want to transfer data between another computer user and also talk to them before or after the transfer on the same call or because you just want to use both the telephone and the modem connected to the same telephone point.

Testing

The easiest way to test your modem setup is to dial a bulletin board. Reach for your communications software and fire it up. As soon as you've fathomed out how to add a telephone number to your dialling directory try putting in a number for a BBS - anyone will do, you could try CIX on 0181 296 1255.

When you get online you will get a request to login (don't worry - they can't start billing you until they have your credit card.) If it is CIX then just type CIX at the login prompt followed by the Carriage Return key. You should see the word CIX as you typed it followed by details of the CIX service. If this all happens as it should then you are up and running!

What can go wrong and how to fix it

The biggest problem with communications is that of trying to run before you can walk. Don't start off with your first access to surf the Web, prove the basics are working first with our little exercise to login to a BBS so as to establish that the basic elements are all working.

Speed is the next most common problem. Just because you have a blindingly fast modem does not mean everyone else has! If you are having problems try starting at a slow speed (say 2,400). Once that is working then put your foot on the gas, turn up the baud rate and watch those files fly.

Cables to connect a modem to a computer used to be a major headache, but general compatibility has got a lot better in recent years. If you are using an old (maybe second hand) modem this could be the cause of some problems. Also there are the odd old modems about that are not Hayes compatible - buying one of these is a big mistake and getting it to work will be a major achievement.

The speed of the serial port on an STFM or STe can restrict the speed your modem will work at. This can be fixed by making a simple modification (see issue 6 of Atari World and Q&A in this issue)

Flashing lights

On the front of most modems are a number of lights that occasionally flash on and off. These do go to make your ST setup look quite high tech – at least to the uninitiated observer. Generally the information they show is totally worthless. However when the modem will not work they might give some help as to what might be the problem. The lights vary between modems - some are flashier and have more lights than others. The more useful ones are:

ON – to show you that the power is on.

LINE – to show the telephone line is in use ie that the telephone bill is running. (If you need to drop the line, the computer equivalent of hanging up a telephone, and your software will not co-operate then just switch the modem off).

CARRIER – shows that the modem has connected to another modem.

SEND – shows that your modem is sending data

RECEIVE – shows your modem is receiving data

ANSWER – when lit up this shows that your modem is set up to automatically answer the phone when it rings.

Buying a modem

So you have decided to take the plunge and start communicating with your ST. What sort of modem do you need?

The need for speed

Generally speaking the faster the better - of course. However just how fast depends on what you are planning to use your modem for and just how much you are going to use it. For World Wide Web access the modem is never going to be fast enough – the huge amounts of data that have to be transferred just to update the screen graphically means the need for speed is paramount. However if you plan to use your modem primarily as a fax or to access a BBS for accessing information and downloading files then the need for speed is considerably less. In the end you

are trading the original price (speed) of the modem against the size of your telephone bill due to increased online time.

Having established what you need, the next decisions are which modem to get and from where. Modems themselves are something of a commodity item - even your local high street PC shop will probably stock them. Equally encouraging, modems are the same no matter which computer they are used with (excepting possible the cable between the computer and modem). Hence the new modem you buy for your ST now could be the modem you use on your new Mac or PC in two years time. When buying a modem it is probably worth buying the best you can afford.

If you buy from a 'regular' PC supplier there are some important things to remember. Firstly any software that comes with the modem will be useless on your ST. Secondly, if you can't get the modem to work on your Atari then there is not much chance your supplier will be any help either.

Going to one of the ST specialist companies may mean paying a little more but at least they will not look totally blank (or worse) when you tell them you are running under TOS! What's more an ST specialist may well bundle some ST specific software that has actually been tested with the modem you are buying. Even more chance that you will get up and running without tears.

Second Hand

So you either can't afford or justify the price of a new modem. Well, depending on what you are intending to use it for then the second hand market may be your answer.

A modem purchased from an existing Atari owner guarantees you a modem that will plug in and go on your system. Beware of a modem described as 'internal'. This means it is a modem that comes on a card and is designed to plug into a 'standard' PC. No way is that going to plug inside your Atari. Any new modem you buy will use the industry 'standard' Hayes command set. If you go back too far in time you will find modems that don't support this standard so watch out.

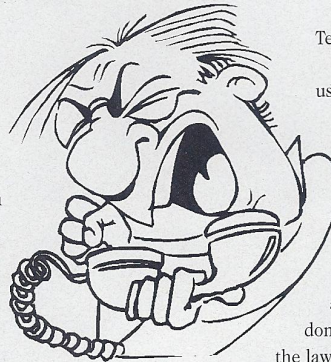
Go back even further and you will come across a device called an acoustic coupler. These connect directly via cups to a telephone hand-set rather than connecting directly to a modern phone jack. This is stone age technology and unless you plan to use your ST in environments that don't have standard phone connectors (Outer Mongolia perhaps) avoid these completely - even if they are £2 in your local car boot sale!

To BABT approve or not?

All modems sold in this country should in theory be BT approved. Some are not and are often cheaper than there

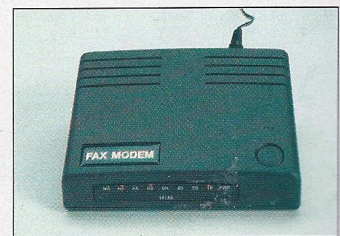
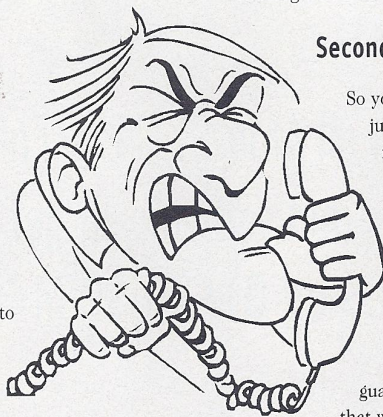
BABT approved cousins.

Ten years ago BABT approval gave you a useful guarantee of a modem's suitability – but standards generally have gone up and it's up to you what you buy. If a modem is not BABT approved then it should be cheaper than an approved version but don't forget you're breaking the law if you use it. Also check that the connector on the back for the telephone is suited to the UK style connector and not the US one.



What should be in the box?

Essentially you should have a modem, a power supply and some cables. Some modems have a built in power supply, which makes for a tidier desk. You would normally expect two cables, one to connect the modem to the computer, the other to the telephone socket. A manual that details all the commands you might need to send to the modem and some software – if the modem is not purchased from a reputable ST specialist then the software is not going to run on your ST.



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Your first BBS

Graeme Rutt looks at your first BBS experience...

Rather than going over ground well covered in my regular comms series, I've decided to use the Compulink Information eXchange (CIX, pronounced "kicks") for this part of the comms feature. CIX is a large, commercial bulletin board system situated in London which offers a lot to any Atari enthusiast. It does cost money to join and use (£25 to join and 4p/minute cheap rate, 6p/minute standard rate) but we think it's well worth it.

If you join you'll find an enthusiastic band of Atari owners, happy to help out with any problems or point you towards the vast Atari file areas. You can say "hi" to most of the writers in *Atari World* or spend a happy hour or two complaining to the editor (he likes that). You'll also find that most of the big Atari firms in the UK are able to offer support via CIX - they include Compo, Hisoft, 16/32 Systems, Titan Designs, the FaST Club and System Solutions.

In addition, there are many other areas of non-computer interest for those less technical moments - be it jokes, graphics or the rights and wrongs of censorship, you can be sure you can chat about them on CIX.

CIX layout

CIX is divided into the mail sub-system, where you deal with personal e-mail and the conferencing sub-system, where you can speak with many people at one time. Each conference (there are thousands of them) covers a different subject (Atari, computer games, butterfly collecting, etc.) and each conference is split into different topics (for example, the Atari conference has a topic for communications, desktop publishing, multi-tasking, general chatter, etc.)

Conferences of particular interest to Atari owners are: atari.st, atari.st.olt, compo, hisoft, ssolutions and, naturally, atari.world.

Downloading the OLR

```

Terminal Setup Misc **** 00:00:00 #00.00 / 00.00 DM
Annex Command Line Interpreter = Copyright 1991 Zylogics, Inc.
Type 'cix' at the 'login' prompt to get started.
Port 37, 152.

login: qix
UNIX System V Release 3.2.0 1386
gonzales
Copyright (c) 1984 AT&T
All Rights Reserved
CIX Version 2.26 17/07/95
Copyright (c) CoSy Conferencing System, University of Guelph, 1984
Portions copyright (c) Compulink Information exchange Ltd, 1985-1995
You are on line: RG/BFGH
Nickname? (Enter 'new' for new user) sabbath
Password:
You have 7 file(s) in your private subdir.
Disc space occupied = 464k.
You have 30 mail message(s) in your in-basket.
You are a member of 51 conference(s).
CIX now configured ready for CixComm
M:

```

1. First you need to load up your comms terminal (Connect, STalker, etc.) and dial the CIX number (0181 296 1255). Then log in with your name and password.

```

Terminal Setup Misc **** 00:00:00 #00.00 / 00.00 DM
login: qix
UNIX System V Release 3.2.0 1386
gonzales
Copyright (c) 1984 AT&T
All Rights Reserved
CIX Version 2.26 17/07/95
Copyright (c) CoSy Conferencing System, University of Guelph, 1984
Portions copyright (c) Compulink Information exchange Ltd, 1985-1995
You are on line: RG/BFGH
Nickname? (Enter 'new' for new user) sabbath
Password:
You have 7 file(s) in your private subdir.
Disc space occupied = 464k.
You have 30 mail message(s) in your in-basket.
You are a member of 51 conference(s).
CIX now configured ready for CixComm
M: j atari.st.olt
You are not registered in 'atari.st.olt'. Would you like to register (y/n)? y
Topics are: '2bugs', '2chatter', 'cixcomm', 'developers', 'docs.latex', 'general',
'kanal', 'problems', 'programs', 'scripts', 'tests', 'usenet', 'wishlist',
'zcixcomm', 'chatter'.
Topic? programs
Joining atari.st.olt/programs (F) 10 new message(s).
READ ONLY
R:

```

2. Next type "j atari.st.olt" and then "y" to join the correct conference and then type "programs" to join the right topic.

```

Connect - Transfer
Status
RZ CRC32
File: atariolt.tos          Block size 1024
Path: F:\FILES\COMPRESS
Size (bytes)      Rate (cps)      Time
15360/369436      1651/1560      00:00:10/00:03:56
Messages
Receive atariolt.tos
Cancel

```

3. Finally, type in "fdl atariolt.tos" to download the program - you may need to hit "Receive File" or similar in your comms terminal to get the file.

How do I go about it?

You can join CIX on-line using a credit card. Simply dial 0181 296 1255 with your modem, type "cix" at the login prompt and then "new" at the nickname prompt and then follow the instructions. What you do then is up to you but I strongly advise that your first action on CIX is to download an off-line reader (OLR).

An OLR enables you to download all your new email and conference messages in one go, read and reply to them off-line (without your modem connected to CIX) and then send any of your replies back in one lump. The saving made in telephone and CIX charges will more than offset the £40 that the package costs.

The OLR for Atari users is a dual package, written by two programmers. The part that deals with the on-line connection is called Cixcomm and the part that deals with reading messages is called Cixread. The rest of this article will show you how to download the OLR, how to set it up and then what you can do with it.

Modem spec

As CIX is a text only service you might be able to get away with using a 2,400 modem - as long as you don't download many files or belong to many conferences. However, this would still be unnecessary wasteful on your telephone bill. I advise that you go for a minimum of a 14,400 BPS modem for CIX. They aren't that expensive and will definitely save you money in the long run.

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The Facts about Fax

David C. Troy looks at faxing the Atari way...

You already know you can use your modem to transfer data and communicate with others, but you can also use a modem to send and receive facsimiles of documents. To be able to do this, you need to have a special kind of modem - a fax-capable modem. However, these days, you would be hard-pressed to find a modem that did not have fax capability. In addition to a fax modem, you also need software for your Atari that can properly communicate with the fax modem. Before we talk about the specifics of faxing on the Atari, let's take a more general look at what a fax really is.

Facsimiles were first conceived of as a way to transmit copies of printed documents and photographs from one location to another. Unlike a telegraph, which uses Morse code to transmit individual letters in a message, early facsimile systems (first used in the 1920s to transmit photographs, weather maps, and other documents) used a photocell to 'scan' the source document. The facsimile machine would then encode each 'pixel' of the document into an analogue sound signal—a low tone for a 'dark' pixel and a high tone for a 'light' pixel. This sound signal would then be transmitted over a dedicated telephone line to its destination, where it would then be decoded by another facsimile machine. The 'fax printer' utilised an electric printhead—a stylus-like device through which current passed—to turn electrically-sensitive paper dark where it should be dark and leave it light where it should be light. The result

was a quite acceptable copy of the original document—a facsimile.

These original fax systems were based on 'analog' technology. The photocell, communications line, and printhead all shared a single, continuously variable electric signal, and the whole works required no computing power. Today's standard fax systems still use a scanner, telephone line, and printer, but they are digital rather than analog.

Today's digital fax machines break a page up into a grid of 203 dots-per-inch horizontally by 98 (low-res) or 196 (high-res) dots-per-inch vertically—you can choose what resolution you need based on the level of detail in your document, whether it contains graphics, etc. The fax machine's scanner digitises the page one line at a time (the number of lines per page depending on the vertical resolution you chose). Each pixel in the scan line is assigned a value of 1 if it's black or 0 if it's white. Then, the scan line is compressed using an RLE (run-length-encoding) compression algorithm. Each line is then transmitted over a modem and a telephone line to a modem in a remote fax machine, where it is decoded and printed, one whole scan line at a time, by a thermal printhead. This process continues until the page is complete, at which point more pages may be sent or the connection can be terminated.

Really, then, a modern digital fax machine consists of a scanner, modem, and printer, not unlike its analog predecessor. The main difference is that digital fax technology does require

computing resources like RAM and a processor of some kind.

Enter computers

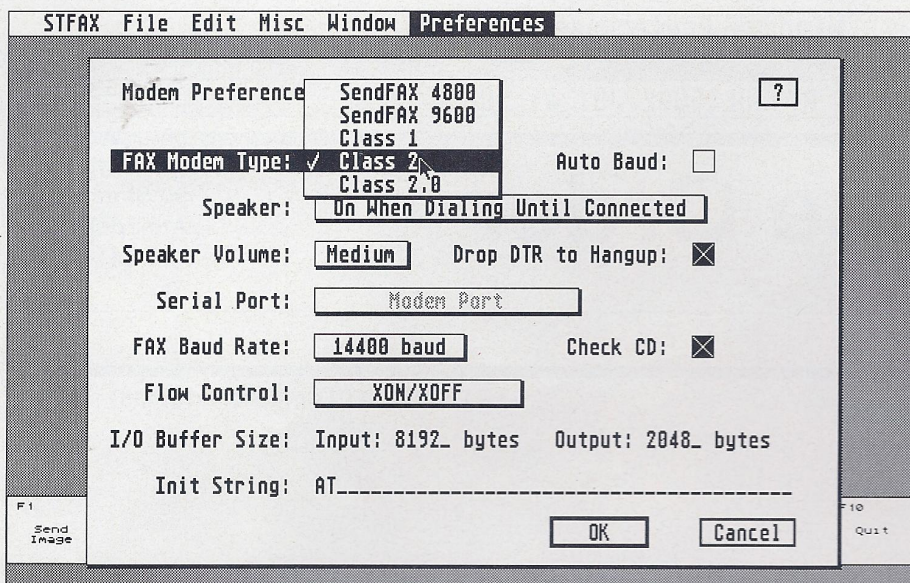
If a fax machine is nothing more than a scanner, printer, and a modem combined with a bit of computing ability, then why can't you use your computer setup—which may include all of these components—to achieve the same ends? Why not indeed!

All you need to send and receive faxes with your Atari is a fax modem and software which knows how to communicate with it. Because fax software can be used to generate fax-compatible pictures from ASCII text, stored graphics, or DTP documents, the 'scanner' portion of the fax system is optional. Because you can use the fax software to view received faxes right on your monitor, the 'printer' part of the system is optional as well! So your Atari and a fax modem can alone act as the heart of a completely functional fax system - with or without a scanner or printer!

As for fax software, the major commercially available package is STraight Fax! (available from System Solutions). There are some other programs available in the public domain, and the more general of the comments in this article certainly apply to those as well. However the purpose of any fax software—despite the platform or specific program—remains the same: to communicate with a fax modem and manage its transmission and reception of fax documents.

Faxing is an integral business tool.

<http://exxos.www.idnet.com/IMPULSE/atari/last/>



Class is important - despite what John Major says.

Another tip: the Suprafaxmodem v.34 28,800 baud modems (as do some others) contain a Flash ROM - so when new fax standards are introduced, you'll be able to upgrade your modem on the fly. This could save you having to replace your modem in a year's time.

Sending a fax

Once you have your modem and STraight Fax in hand, you're ready to start sending faxes. After installing STraight Fax and plugging in your modem, go ahead and start the program. We'll begin by sending a simple fax coverage.

Go to the "File" menu and select "Cover Page...". A simple dialog box will appear. The fields here will be placed on your coverage page. Type in your name, your return fax number, and your recipient's name. You may also enter up to six lines of text in the "Message" field. When you have completed the form, click on the "OK" button.

You will then be prompted to choose a telephone number to dial—either from your dialing directory or entered manually. After you have selected a number to dial, STraight Fax will create your coverage page, which is actually a bitmap image stored in the RLE format used by conventional fax machines. After this conversion is complete, STraight Fax will dial your destination. When the remote fax or fax modem answers, the two modems will negotiate for the fastest possible speed, exchange a few parameters (like the resolution and size of the image) and then begin the transmission. After your coverage page has been sent, the modem will hang up and STraight Fax will make a little "victory" noise to indicate the transmission was successful. It's that simple.

Creating faxable images

One of the most important concepts to remember is that faxes, when they are finally sent, are nothing more than black and white bitmap images. Other bitmap image formats like IMG and TIFF can easily be converted to the fax bitmap format using STraight Fax. Similarly, fax format images can easily be converted into IMG and TIFF formats, and they can also be viewed or printed from within STraight Fax! To prove this, take a look at the COVERPAG.J01 (STraight Fax fax-format files are called .J01, .J02, .J03 to indicate page numbers in sequence) file created by our coverage fax transmission. You can see that STraight Fax converted your ASCII text into graphics using a standard Courier font included with the program. This font is also used to create fax files from standard ASCII text documents.

In fact you can use STraight Fax by itself to send IMG, PCX, Degas, 1st Word and standard ASCII text files. But what if you want to send documents created by PageStream or Calamus? STraight Fax

cannot read *.DOC or *.CDK files natively, but the package does include printer drivers for both PageStream and Calamus that create fax files.

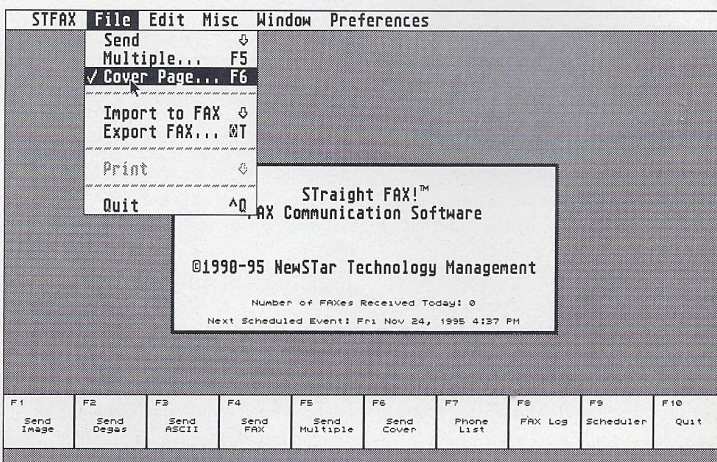
If you install the STraight Fax printer drivers into PageStream or Calamus, printing to these drivers will create fax-format bitmap pictures of your pages. These files can then be loaded by STraight Fax and faxed directly.

Advantages to computer-based fax

Using your computer to send faxes can improve their quality immensely. When you use a conventional fax machine, you are relying on the low-quality scanner in the fax machine to accurately digitise your page. If you create your image on the computer, the streaks, dropouts, and skewing that might occur with the fax machine are eliminated.

Similarly, using your computer to receive faxes (which can be done automatically or manually with STraight Fax) also produces superior results. When a fax is received on a conventional fax machine, it is imaged onto the flimsy thermal fax paper we all know and love. If received on your Atari, it can be printed, archived, and even converted into IMG format for inclusion in DTP projects. This is a great way to keep a permanent record of fax correspondence.

And remember, there's no mystery about fax standards or the way they operate. faxes are nothing more than just another kind of bitmap graphic, and all you need is a fax modem and fax software to send faxes to millions of destinations all over the world. Happy faxing!



Straight Fax is fax software with a straightforward GEM interface.

Web Atari on the

Graeme Rutt looks at the Atari and the Web.

One of the most compelling reasons for buying a modem and getting board the comms train is the Internet. This huge, multi-faceted, network of computers is full of enticing information - from programs, to text files, to pictures. There is also a very healthy and burgeoning Atari presence on the Internet, which can help and advise you with any problems you have. I've been on the Internet for years now and don't think I could survive without it.

When I started the Internet was a very technical place, with the emphasis on large university and business computers. As, at the time, modems were slow we all used a text interface to the Internet - which was a bit of a black art. Thankfully over the past few years graphical interfaces have become all the rage and the biggest graphical interface of them all is provided by the World Wide Web (The Web, or WWW).

There's no way you could have avoided these terms, especially during the past few months. The Web is big business. Every big company you ever heard of has a "Web Presence", children's television programs boast of their "Web Sites" and the programmers who've coded the "Web Browsers" are worth millions.

The Web

So, what is the Web? To put it simply it's a way to look at information (text and graphics) over a modem connected to the Internet. You view the information using a Web Browser program and, generally, the information is pooled together into a Web

Site. For example, Sony Music has a site where you can read all about their bands, Toad Computers has a site where you can read about their Atari computers, etc.

The sheer number of sites is overwhelming, and they aren't just limited to different companies. For a few pounds a month anyone can set-up their own site and it seems like everyone has. There are sites of interest to everyone, from pig farmers to stamp collectors to stock brokers.

The Atari on the Web

Until recently, the Atari had no way to view the graphical wonders on the Web. Now we have our own Web Browser that works very well and is available on this month's Reader's Disk for Atari World subscribers. It's called the Crystal Atari Browser and you can play around with it without a modem at all - but to access the Internet you need both a modem and an account with an Internet service provider.

Service providers are spread around the country - from large firms like CLIX and Pipex who cover the whole UK to small firms that cover maybe a whole town. Generally you will pay a one-off start-up fee and then a monthly charge of between £10-£15. Most service providers do not charge by the minute.

If you have the required items you can now get on and make your first connection to the Internet. You should first check the boxout "Give It Some STiK" which explains how to set up your Internet connection. Then when it's working you can run CAB.PR.G, the browser program itself.

Crystal Atari Browser

When you run the browser you'll find that it will open up a window which contains some text and graphics. This is your first Web page, which is actually held on the reader's disk rather than on the Internet. You can browse around this page by clicking on any text which is underlined or graphics with a border (these are "links" to other HTML pages).

What you do then is entirely up to you and is dependant on what you want to look at on the Internet. If you know a specific address to go to (Web addresses start with 'http://') then select "Open URL" in the File Menu and type in the address. Otherwise you might like to look at the Hotlist in the Navigate Menu and select from one of the places of interest that we've already set up for you.

If you have an area of interest but no address then check out "http://www.yahoo.com/" which is probably the biggest list of sites on the Internet. It's split up into different subject areas and is well worth a browse.

Once you're in a site you move around by clicking on the links, which can take you to different areas in that site or even to entirely different sites. If you find a page that interests you you can move it into the Hotlist by selecting "Document -> Hotlist" in the Navigate menu, so you can get back to it quickly.

That's all there is to graphical browsing - it's a tool that gets you to information in the easiest possible way. Simple to use and utterly earth-shaking.



Give it some STiK

The part of the browser package which deals with the Internet connection is called STiK. It's a desktop accessory so your first step should be to copy STiK.ACC to the root directory of your boot drive (A: for floppy disks, C: for hard disks). Secondly, you should copy the STiK_CFG folder to the same disk. Now you are ready to edit the configuration files.

First check the SCRIPTS folder inside the STiK directory. This may well include some example files for whichever service provider you're planning on using. If so, then copy the files over to the STiK_CFG folder. If not, then don't worry - I'll be dealing with every aspect of the files you need to change, below.

To change the two files - DIAL.SCR and DEFAULT.CFG - load them into any standard text editor (for example, Everest). Some of the things you'll find inside here look a little imposing but things are pretty easy to set up if you stick to this guide.

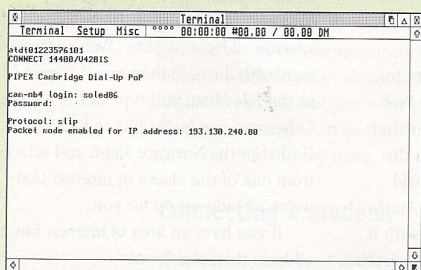
DIAL.SCR

This file deals with the settings required to dial your service and log into the system. The only entries you'll need to change are as follows:-

BAUDRATE = should be set as high as your Atari can handle it. 19200 is the highest speed standard STs can cope with, 38400 or even 57600 should be used for Falcons and TTs. Note that this isn't the speed of your modem, this is the speed of your serial interface.

PHONE_NUMBER = is the telephone number that your service provider has given you to dial.

Finally we come into the login phase of DIAL.SCR. Here you have to tell STiK which text strings to wait for ("login:", "password:", "protocol:") etc. and then the different response strings. To find out exactly what happens when you log in, dial up the number with a standard comms terminal (Connect, STalker, etc.) and make a note of the different strings and their responses.



Here in Connect I've shown my login to my own service provider, Pipex. So, in the DIAL.SCR file I have:

```
WAIT
FIND = ogin:
RESP = soled86
#
WAIT
FIND = assword:
RESP = [whatever my password is!]
#
WAIT
FIND = ocol:
RESP = slip
#
WAIT
FIND = address:
RESP = $GET_IP
```

The final 3 lines are only required if your service provider has told you that your IP address is dynamically allocated.

DEFAULT.CFG

This file is where the more technical aspects of the connection are described. The only aspects which you should need to change are:-

SERIALPORT = needs to be set to whichever port your modem is connected to. In the STiK package you'll find a program called LISTPORT.TOS. Use the name of the first serial port that it shows when you run it. This will normally be either "Serial 1" or "Modem 1".

CLIENT_IP = only needs to be set if your service provider gives you your own IP address (the opposite to dynamic allocation), if so put in the address they give you. If not, put a "#" character before CLIENT_IP.

USERNAME = can be whatever you want, your own name or any nickname.

HOSTNAME = should be everything after the "@" in your e-mail address (ask your service provider for that). My email address is "sabbath@dial.pipex.com", so my hostname is "dial.pipex.com".

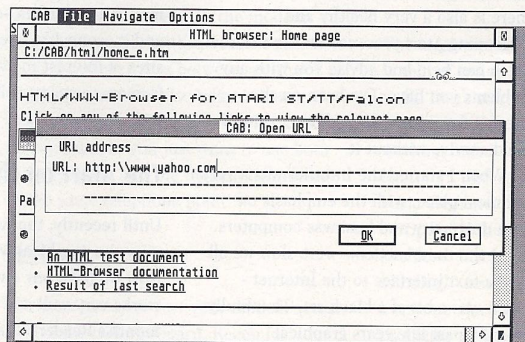
FULLNAME = is your full name.

NAMESERVER = should be set to the 4 number (separated by full stops) Domain Name Server (DNS) identification given to you by your service provider.

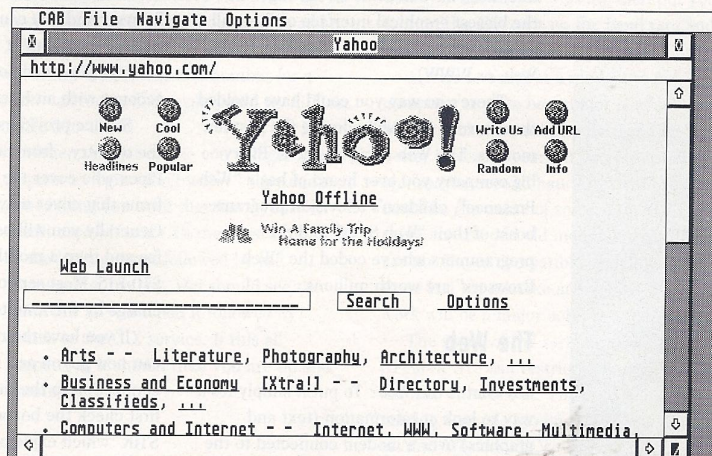
There are some other aspects you can change (for example, to use the IRC program) but these are all you need to change to get the CAB browser up and running.

Modem spec

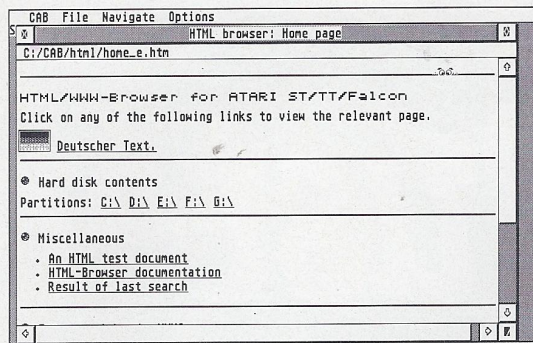
Graphics take a long time to transfer over a modem. To give you an idea, the file size of this article is maybe 6 kilobytes. A graphic of that size, even in monochrome, would be maybe a third of the size of a standard high-res Atari screen. So to access the Web you'll need a fast modem - 14,400 is a bare minimum and 28,800 is very much recommended. If you use a slower modem - watch out for those phone bills!



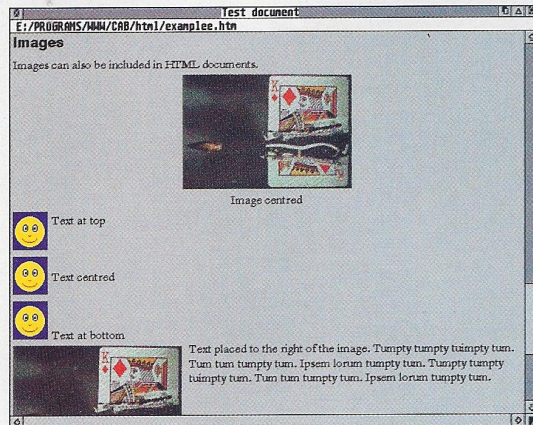
The "Open URL" button leads to this dialogue where you can enter a valid Web site address.



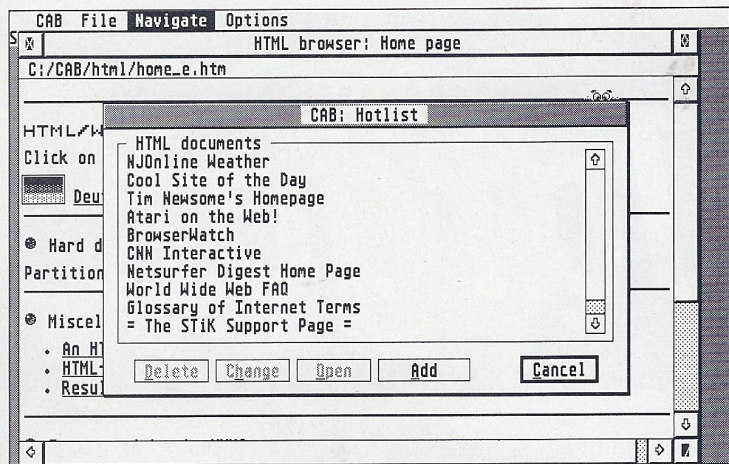
Yahoo is a wonderful directory of sites, split into different subject areas - it even includes a search engine.



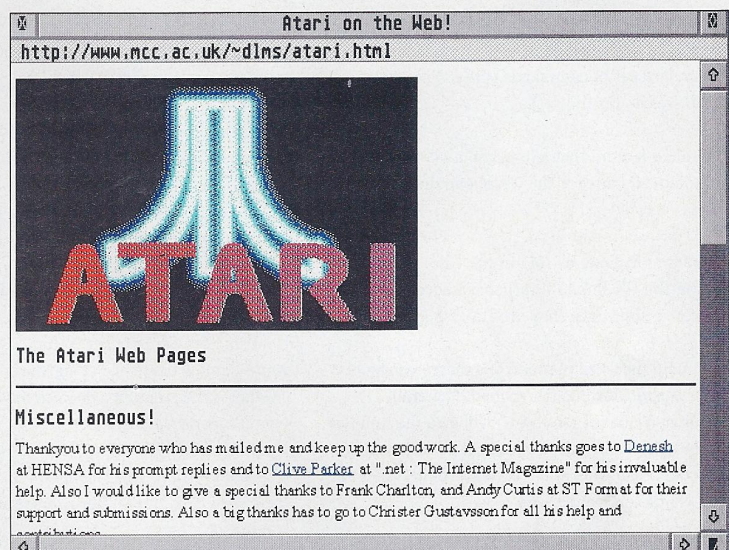
The Crystal Atari Browser should look something like this when you run it.



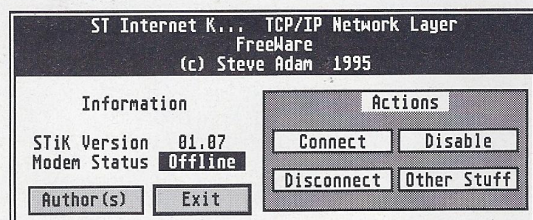
CAB is a well written GEM program so works on any Atari equipment, even those with big colour screens, here it's really sparkling on the Falcon.



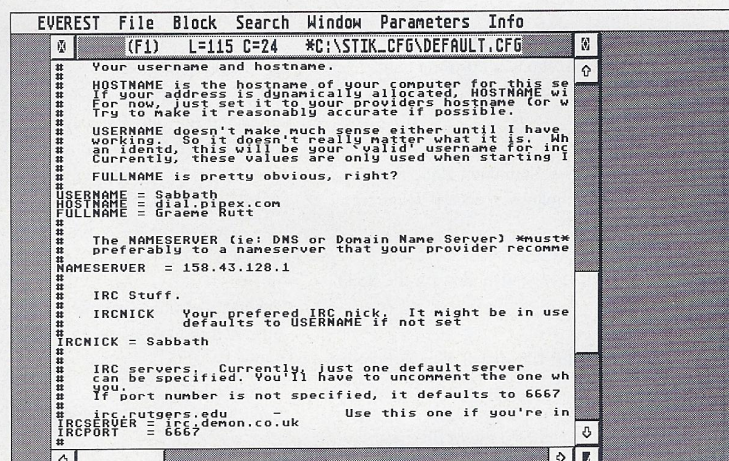
The "Hotlist" menu entry takes you to a list of sites of interest, you can add your own with "Document -> Hotlist".



This site is one of the best for Atari links, and it's in the UK, so fast response times are the order of the day.



The STiK dialog box, "connect" and "disconnect" are self explanatory, the button "enable" is used to switch STiK on and off if it's causing problems with other comms programs.



Editing the DEFAULT.CFG file in Everest.



Comms Jargon Buster

413A

A type of plug. The same as the plug found on the end of a modern telephone which connects into a standard modern telephone socket.

AT

A command sent to the modem to get its attention

AT command set

A standard set of commands (otherwise known as the Hayes command set)

Auto answer

A modem feature that allows the modem to automatically answer the telephone line when a call is received

BABT

Standard for modems sold in the UK. All modems sold in the UK should - in theory - carry a green sticker to show that they are BABT approved.

Baud

The main measure of speed of data transmission. Baud is short for bits per second. Generally dividing the board rate by 10 will give the number of characters per second that will be transmitted. eg a modem operating at 2400 baud would transmit 240 characters per second.

Bulletin Board

A computer service that allows calls via an auto answer modem(s) and allows callers to leave messages, send E-mail or download files.

Connect

A message displayed when you have successfully connected to another modem. Also the name of a popular Shareware/Commercial communications program

Command mode

When the modem is in Command Mode then it is ready to receive commands or escape sequences from the computer

CTS

Clear to send - a line to control flow on the RS232 interface

Data compression

A method for reducing the size of data without loss of information

Downloading

The process of transferring a file or files from a remote computer onto your floppy or hard disk.

DTE

Data Terminal Equipment is in this case your Atari. The speed of transfer between the modem and the computer (sometimes called the DTE speed) - note that because modern modems have built in data compression routines this DTE speed is often much faster than the speed between the modem and an external modem.

DTR

Data Terminal Ready, a signal on the RS232 interface - when it is 'on' then the modem is ready and the telephone line is 'off hook'.

External Modem

A modem cased in its own box and with its own power supply. The ST will only work with external modems (see internal)

Flow control

Data sent down line at speed the modems can cope with - see XON/XOFF and RTS/CTS

Freeze Dried Terminal

A popular PD comms program particularly suited to colour monitors.

Internal modem

A modem designed to plug inside a PC - no use to Atari owners.

Handshaking

A pre-defined exchange of signals or control characters between two devices that sets up the conditions for data transfer.

Host system

A general term to describe a system that accepts telephone calls from other users. For example CIX is a host system.

Login

The process of identifying yourself to another computer/service

MNP

A number of systems for data compression and error detection. There are 5 levels of MNP, 2, 3, 4, 5 and 10. When two modems with MNP are connected they automatically detect the highest level of MNP that is common to both.

Null modem

Off hook - the status of the telephone line is 'in use'. The same as if you lift the handset of a normal telephone.

On hook

The status of the telephone line is 'not in use'. The same as if the telephone handset is replaced in its cradle.

Parity

A simple form of error detection.

RJ11

American style telephone plug often required for the modem end of the cable that connects the modem to a standard telephone socket.

RS232

A standard that defines the physical and electrical characteristics of a serial interface. It is the RS232 or modem port on an Atari that the modem is plugged into.

RTS

Ready to send, a line on the RS232 interface

RTS/CTS

flow control by hardware

STalker

a popular Commercial communications software package -

Uploading

Sending a file or files from your Atari to a remote computer.

UU Encoding

a method of changing a binary file into an ASCII file so that it can be transmitted over a network that will only transmit ASCII and not binary data.

Terminal

Originally used to describe a 'dumb' keyboard and screen but now used to describe any device which connects to a host system. For example if you logon to CIX your Atari is acting as a terminal.

V.xx

A standard for modem speeds, error correction and data compression. Finding out the V numbers defines how fast the modem will send and receive data.

V.21	300 bps
V.22	1200 bps
V.22 bis	2400 bps
V.23	1200/75 or 75/1200 bps
V.32	4800 or 9600 bps
V.32 bis	4800, 7200, 9600, 12000 or 14,400 bps
V.34	2400, 4800, 7200, 9600, 12000, 14400, 16800, 19200, 21600, 24000, 26400 or 28800 bps
V.42	- a standard of error correction
V.42 bis	- a standard of data compression

XMODEM

A simple form of file transfer

XON/XOFF

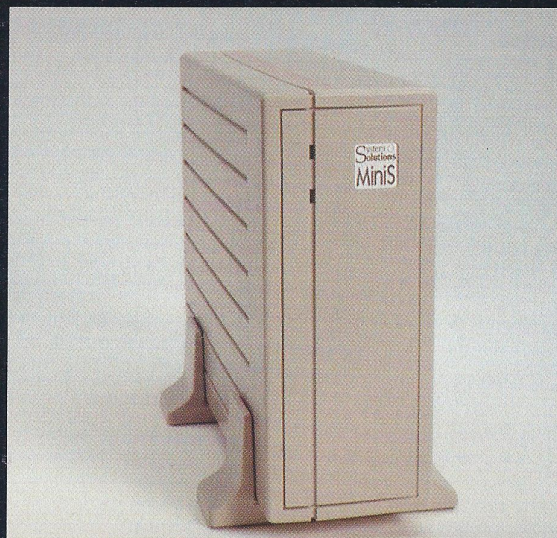
Flow control by software

ZMODEM

Sophisticated file transfer system - ZMODEM is supported by most popular Atari communications software and should be your preferred method of file transfer.

The hard stuff

A beginner's guide to the hows, whats and whys of the hard disk drive. Iain Laskey leads off with a look at the technology and what it can do for your ST.



Of all the upgrades you can add to your ST, there is one that will make by far the biggest difference to your computing and the way you work. It's a hard disk. Once upon a time hard disks were extremely expensive toys for the rich or insane. As with all things computer related, the price has slowly fallen and nowadays more and more people have taken the plunge and bought one for their Atari.

Hard disks used to be known as Winchester drives after the IBM facility where they were first developed. Unlike floppy disks which are quite literally floppy, hard disks consist of a solid metal disk with a magnetic coating which spins at a very high speed, typically about 3600 rpm inside a sealed case. The case is sealed to prevent any dust getting inside. The read/write heads float on a cushion of air a fraction of a human hair's width above the surface of the disk and a single speck of dust could destroy either the heads or your valuable data.

So, what can a hard disk do for you?

The two main advantages are their capacity and speed. Whereas a floppy disk holds either 720K or 1.44Mb, a typical Atari hard disk holds 300Mb and often much more. Even on STs, one gigabyte (no less than 1,000 Mb - or the equivalent of nearly 1,400 floppies) is not uncommon. Bear in mind that Atari software tends to be much more compactly written than PC equivalents. Whereas PC word processors take 20Mb or more of space, the ST counterparts often need only 3Mb or less, so even a 100Mb drive offers a considerable amount of space.

The speed is also impressive. A standard ST can manage well over a megabyte a second and often much more. Imagine loading your favourite database in a second or two? The time taken to open and close files is also much quicker. File intensive programs like databases and DTP programs like Timeworks are incredibly quick on hard disks compared to floppy based systems.

The increased capacity means you can have all your favourite software available without having to constantly feed different

floppy disks into your machine. This makes an enormous difference to your systems usability. Running your Atari seems like a whole new ball-game. You can run program after program without ever needing to rustle about in your disk box. Once all your software is installed, the chances are you'll only ever use the floppy drive to install new software or to perform backups. Just describing what a hard disk based system is like can never really do justice to it however. It's like having a whole new machine. It just feels so much more 'professional'.

With this new found convenience does come some problems though. When your software is run off a floppy, each program can have its own auto folder and accessories. With a hard disk, you're always booting off the same disk so you get the same auto folder with the same programs. You may not always want items like GDOS loaded so what can be done? The answer is a boot manager utility.

Another problem is with all your eggs in one basket, a hardware problem or a virus could spell big trouble. A good virus checker can take care of the latter but what about hardware failure? With all the benefits of hard disk comes a certain amount of responsibility and regular and efficient backup of your valuable files is essential.

Making the connection.

The huge range of options for the prospective hard disk owner can be daunting. What's it all about?

When Atari designed the ST, they had an uncharacteristically bright idea in as much as they built in a hard disk interface. This was a Good Thing. However, they decided to take a perfectly good standard, SCSI and modify it into their own flavour called ACS. This was a Bad Thing.

Terminating hard disks

SCSI hard disks may be "daisy-chained" together to add up to 7 hard disks to your computer. At the start and end of the chain the wires connecting the disks are effectively "free". The signals travelling up and down them can become confused in this situation and lead to all sorts of different problems - from non-working disks to data corruption.

To stop these problems from occurring the start and end of the chain must be "terminated". There are two methods by which you can terminate the ends of the SCSI chain. The first is to insert a resistor pack into the correct pins on your drive and the second is to use an external terminator and plug that onto the last SCSI port in the chain.

You should always discuss termination with your hard disk vendor to find out what you need and how they supply your new drive. You should be aware that opening up your drive's case to plug in a resistor pack will certainly void your guarantee.

For third parties however it was a very Good Thing and soon there was a growing market in SCSI adapters. One of the earliest companies to get involved was ICD. Still very popular today, the ICD range of adapter cards allowed other companies to build cheaper Atari hard drives. Many people built their own at considerable saving although today the price advantage is considerably less.

Adapt and survive

These adapters are small circuit boards into which you plug a SCSI hard drive. It's then a simple matter of connecting a cable from the ST to the adapter board, adding a power supply and case then switching on. Well, almost. The drive will also need to be formatted and driver software installed. More on this later.

Later on, the interfaces were improved with additions such as real-time clocks being added enabling your ST to automatically set itself to the correct time and date every time it was switched on. They have also got much smaller. Early boards were about 7 by 4 inches but improved design has resulted in boards less than 3 by 1 inches in size.

A single SCSI interface can support many different devices so with appropriate software drivers, you can add additional hard disks, removable hard disks, tape streamers, scanners and CD ROM drives. Anything that is SCSI-based can be connected and used, software permitting.

In the last couple of years there has been another small change. Previously you needed to buy an Atari specific hard disk which had the adapter inside the main casing itself. Now you can just buy a standard SCSI hard disk or CD ROM and connect it via a small external adapter. A popular make of these is the ICD Link 2.

Let's get physical

So what types of drive are there? In terms of physical size, you can get 3.5 inch and 2.5 inch bare hard drives. The former being by far the most common. The drives are also measured in terms of half height and full height although 99% of drives you would use with Atari will be half height. The cases that Atari hard drives come in reflect this, they would be a lot bulkier if they had room for full height units in them.

This has drastically reduced the cost of adding a hard disk as now you can buy a standard PC or Mac external hard disk with all the economies of scale that entails.

You can still buy Atari-specific drives but these are generally just standard SCSI ones sold by Atari vendors. There's nothing miraculously different about them - they'd probably work with Amigas, PCs and Apples Macs - but you do get peace of mind and the knowledge that the drive is set up for your Atari.

The top end

The TT introduces something new to the equation. TTs have a built in SCSI interface. Just connect an external drive, install Atari's hard disk driver software, AHDI and you're up and running. You may also use various 3rd party drivers such as ICD Pro or HD Driver.

The Falcon offers the best of both worlds. You can plug in an external SCSI hard disk just like the TT but you also have the option of an internal IDE drive. IDE is by far the most common standard in the PC world and IDE based drives are very cheap. You can put any 2.5 inch IDE drive inside the Falcon. With a little cutting and shoe-horning, some people have managed to fit a 3.5 inch drive inside but it's not a job for the faint hearted. This is a pity as this size of drive is much cheaper than the 2.5 inch sort.

SCSI identifiers

Any SCSI device (hard disks, CD ROM drives and the like) needs to have its own unique identifier (ID). They range from 0 to 7, giving 8 possible devices on the SCSI daisy chain. The way that you change your SCSI ID is dependent on your drive.

Some have a selector on the back of the case but many drives require you to open up the case and fiddle about with jumpers on the hard disk mechanism itself. This will definitely void any warranty you have for your disk. If you are buying your first hard disk then it should be set up to run perfectly well as soon as it's plugged in. However, if you are adding another hard disk to your system you should ask your vendor to pre-configure the drive to a new, and unique, SCSI ID.

Hard disks and your Atari

Graeme Rutt deals with the hard disk devil...

So you've taken the plunge and bought that big hard disk beast. It's sitting on your desk, connected up correctly and in your hand you hold a disk which contains something called "driver software". You know the advantages the hard disk will bring you. You're salivating at the prospect of all that speed and storage. You're ready to get going.

Feel like you're staring at one of those Magic Eye pictures and - whatever you do - you can't get the image to pop up before your eyes? I did. I found the translation from floppy to hard disk a big jump - one which I needed a lot of help with.

That was some time ago, as with most new things hard disks now seem like child's play. Now I find myself in the honoured position of helping you to get to grips with your new purchase. With a little help and a little experience you'll soon work it all out and be up and running.

In this section of the feature I'll be looking at the nitty-gritty of configuring your hard disk. I'll be explaining the principles and also suggesting some ways in which you can improve and optimise your hard disk usage. We'll start with a look at driver software - what it does for you and how to use it.

Driver software

All hard disks require driver software. This is because the necessary program code to send and receive data from the different types of interface (ASCI, SCSI and IDE) are not included (quite correctly) in the Atari operating system. The most common - it's freely available - driver software is AHDI, the Atari Hard Disk Installer. We'll be dealing with AHDI in this article - but take a look at the "Other Drivers" boxout to see what's available in the commercial sphere.

Driver software can either be run from floppy disk or installed onto your hard disk, making it "auto boot". Booting from floppy is as simple as turning on your hard disk, booting your computer and running the correct program from your floppy disk (in the case of AHDI, AHDI.PRG). To automate the process a little you can put the program into the Auto folder on your floppy drive. This is a relatively slow, clumsy process and should only be used in exceptional circumstances (see below).

It may seem strange that a hard disk is able to run its own driver software. How can it even see the hard disk before the driver software has been run? The answer is that some very clever code is put into your hard disk's boot sector - this runs

Harder SCSI Drives

If you are about to buy a hard drive - make sure you ask your supplier for:

- ★ 2 year warranty on parts and labour
- ★ high quality performance drives
- ★ new drive mechanism (no refurb drives disguised by new cases)
- ★ true SCSI chainable systems
- ★ a helpline with expert staff
- ★ all cables and software included

MaxiS Singles

850Mb Seagate	£329.00
1Gb Conner	£369.00
2Gb Conner	£779.00
270Mb SyQuest	£499.00
230Mb Mag.Optical	£559.00
2Gb Tape Backup	£579.00

MaxiS Doubles

270Mb Quantum &	
270Mb SyQuest	£649.00

For STFM or STe computers add
the ICD Link II for only £50.00

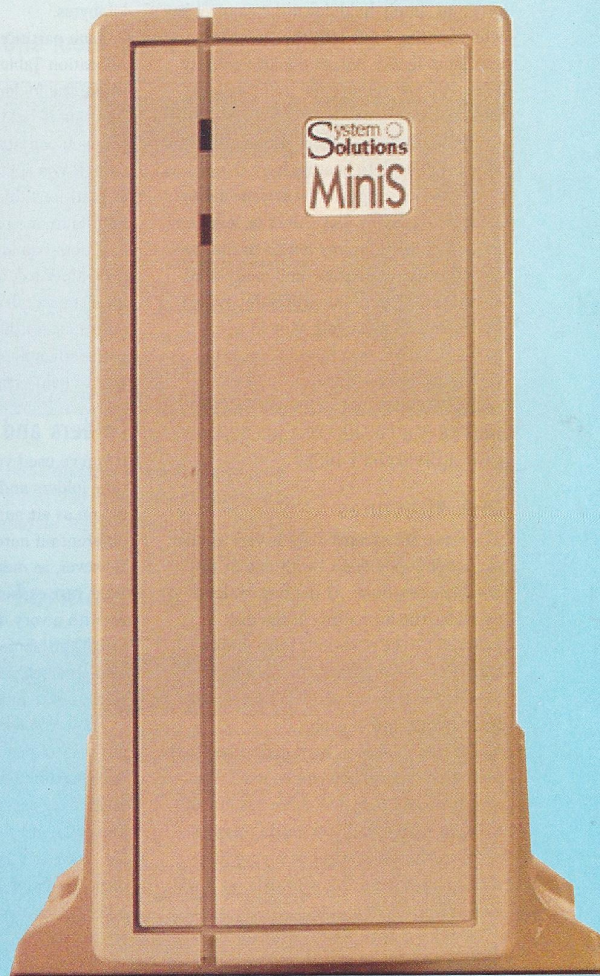
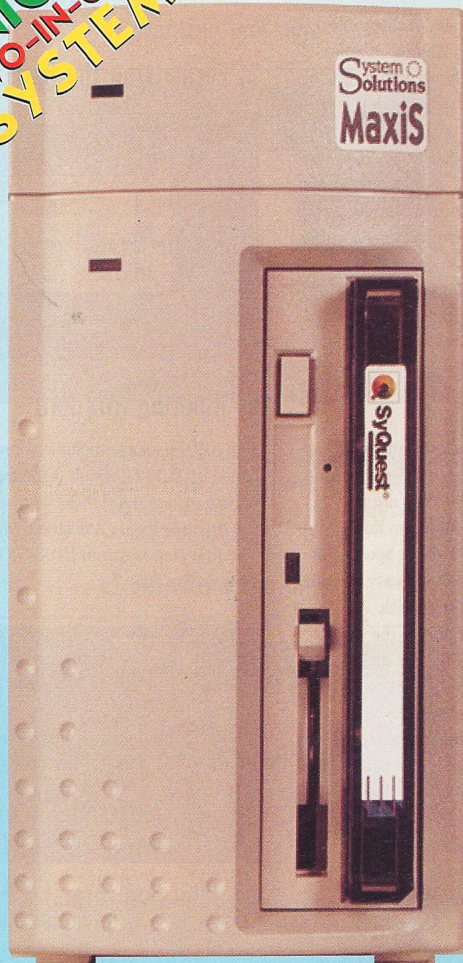
MiniS Drives

270Mb Quantum	£219.00
450Mb Seagate	£259.00
540Mb Quantum	£279.00
850Mb Quantum	£309.00
1Gb Quantum	£349.00

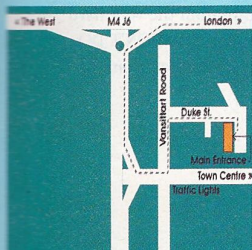
Established quality. Best value - unbeaten in price!

**UNIQUE
TWO-IN-ONE
SYSTEM**

Buy one drive now - add one drive later



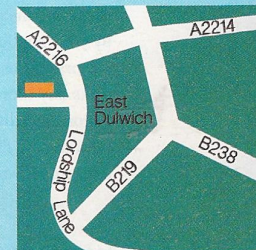
To place your order, call 01753-832212



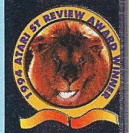
MAIL ORDER,
Windsor Business Centre
Vansittart Rd, Windsor, SL4 1SE
Fax: (01753) 830344

SHOWROOM,
17-19 Blackwater Street,
London, SE22 8RS
Fax: (0181) 693-6936

(01753) 832212 (0181) 693-3355



Minis
SCSI Hard Drive of the Year 1994



System
Solution

automatically whenever you turn on the system. It loads the driver itself and then everything runs as normal.

All driver software comes with an auto-boot installation program or similar. In AHDI this is called HINSTALL.PRG. When you run this program it writes the correct code into the boot sector of your hard disk and puts the driver file (which normally ends with a *.SYS extender) onto the root of your boot drive.

While setting your system to auto-boot from hard disk is a fast, elegant solution it does present one or two problems. It's all too possible to get into a situation where your system becomes unusable when you turn it on. This could be due to something as innocuous as an Auto folder program which is bombing or as disastrous as a corrupted drive SYS file or even a virus in the boot sector of your hard disk.

If it's a problematical Auto folder program simply hold down the Control key while booting - this tells the operating system to ignore the Auto folder entirely. Then you can remove the duff program and boot as before.

If the problem is more serious you can always fall back to booting from floppy - as long as you've kept a copy of your driver software on floppy disk. All of us who've used hard disks for any length of time have fallen prey to this - and many of us didn't have that all important floppy - so I'm going to put the following in a paragraph of its own (and I'll put it in capitals for good measure).

ALWAYS KEEP A COPY OF YOUR DRIVER SOFTWARE ON A REGULARLY CHECKED FLOPPY DISK.

Disk structures

The structure of hard disks is very similar to that of floppy disks - with one or two notable exceptions. At the bottom level you have the formatting of the disk, followed by the partitions (also known as logical drives) and then the familiar territory of folders and files. Below is a brief description of each.

Just like floppies, hard disks need to be formatted before they can be used. You may find that your new drive has already been formatted and you needn't format again. It should go without saying that formatting a hard disk with data on it will erase all of the contents.

One task often linked with the formatting of hard disks is that of marking bad sectors. As the name implies bad sectors are those which cannot be used - they may be physically damaged - marking them bad means that they will not be used by your applications. Whilst a few bad sectors will usually be found on older hard disks any more than that can be a sign of major hard disk problems. Marking bad sectors on a disk full of data may be dangerous, you should always back-up

important files first.

Partitioning is almost unique to hard disks - you would certainly not be able to partition a floppy disk. It involves creating the necessary internal structures to split the physical disk into different sized chunks. For example, a 300Mb hard disk could be split into three 100Mb partitions. Each piece would have its own drive identifier (C, D, E and so on) and would feel and act just like a separate hard disk. For this reason partitions are known as logical drives. As with formatting, re-partitioning a disk with data will erase all the data on the disk.

You should partition a disk for a number of reasons:-

1. As the size of disk increases so does the minimum amount of data that can be used to hold any file. With large partition sizes (all disks have at least one partition) a 1 byte file could take up to 8 or even 16 kilobytes.
2. Each partition will have its own File Allocation Table (FAT). This is an area where the folder and file structure of your partition is held. If it's corrupted in any way you can normally say goodbye to your data. If you split your disk into a number of partitions the risk of losing your data is limited to one partition (per corruption).
3. Unless you keep a lid on things it's easy for a hard disk to become a very unorganised place. Using different partitions for different things (boot partition, applications and data) is one way to help organise your disk.

Folders and files

If you've used your Atari for any length of time folders and files should be as natural to you as air and water. They are no different on hard disks than on floppies. However, as mentioned above because of their vast capacity it's all too easy to end up with a very disorganised disk. An intelligent choice of folders is the key principle behind keeping your disk uncluttered and your data easy to get at.

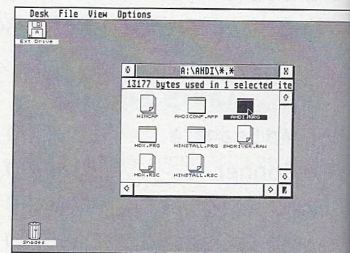
How you actually organise your data is a matter of personal preference. I have a boot partition, an applications partition and a data partition whenever I set up a hard disk. If I - or the person I'm doing it for - have any large data requirements (for example, graphics or sound) then I might add another partition or two for those types of file.

In each partition I separate each application and each type of file into its own folder. If I think that I'll have enough of any one type of data then I may split it down further - for example, in my documents folder I have folders for articles, letters, faxes. This type of scheme won't be ideal for everyone - the only rule here is to have some kind of organisation and to stick to it.

Setting up a hard disk

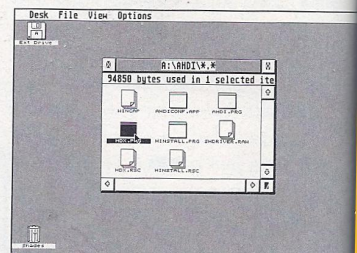
1. Running a driver

Before you can even format a hard disk



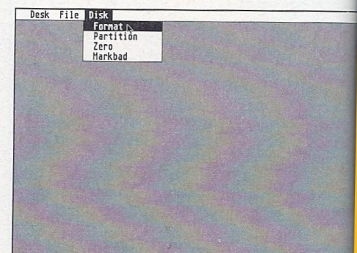
you must run the driver program. This enables the utility software to perform its various tasks. The AHDI driver program is called 'AHDI.PRG'. Insert your floppy disk into the drive and double click on it. If it finds your drive then carry on - if not check your connections etc. and try again.

2. Formatting the hard disk



a) Running HDX.PRG

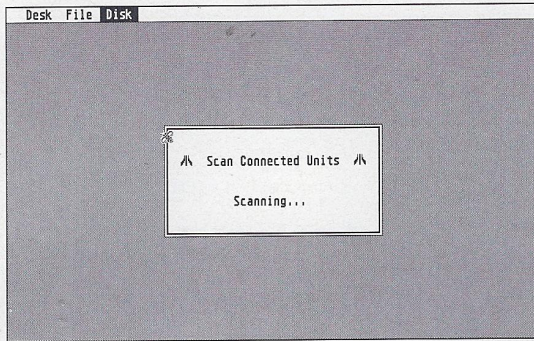
The AHDI package includes a program called 'HDX.PRG' which formats, partitions, etc. hard disks - providing that the driver software has already been run. The first step is to run HDX.PRG from your floppy disk.



b) Selecting format

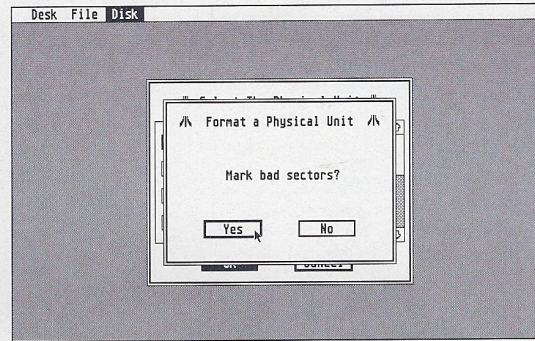
We're about to format your hard disk. I'm going to stress, yet again, that this will delete all the data on the disk. Make sure you have the entire AHDI package on floppy disk - the biggest pit fall here is to run the HDX software from the very hard disk you're about to format - DON'T DO IT! To continue select 'Format' from the 'Disk' menu.

c) Scan for devices



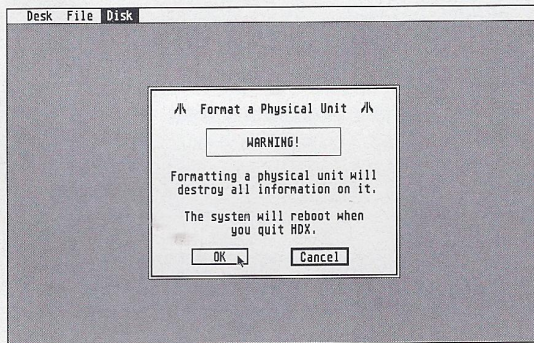
HDX will now automatically scan for devices connected to your system. It will try to find every hard disk and CD-ROM drive available. You don't need to do anything at this stage, just wait for it to finish.

f) Mark bad?



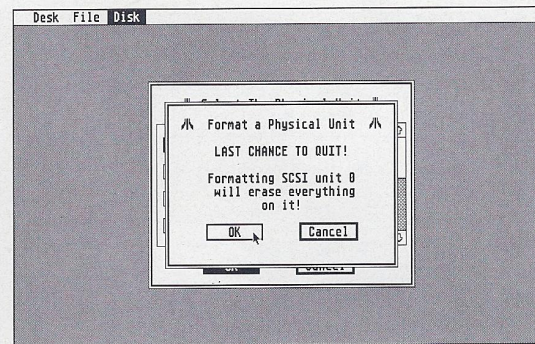
Next a dialogue box will open up in which you'll be asked whether you want to mark bad sectors on your disk. Always click on 'Yes', so that these unusable sectors won't be used by the operating system.

d) Warning message



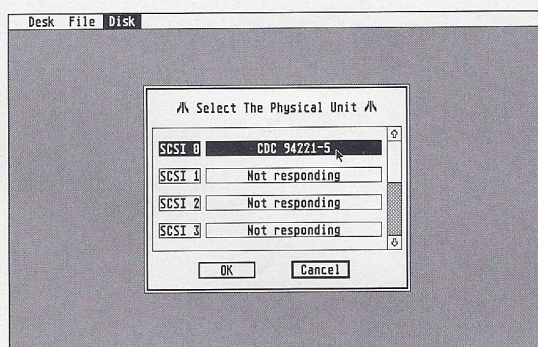
Now HDX will come up with a warning at least as stern as mine about the dangers of data loss. If you're sure that nothing can go wrong then click on 'OK'.

g) One more check



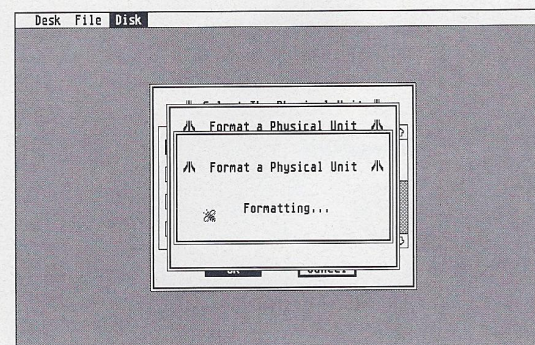
One more dialogue box will come up to check that you're sure about what you're about to do. Again, if you're sure, hit 'OK'.

e) Selecting the unit



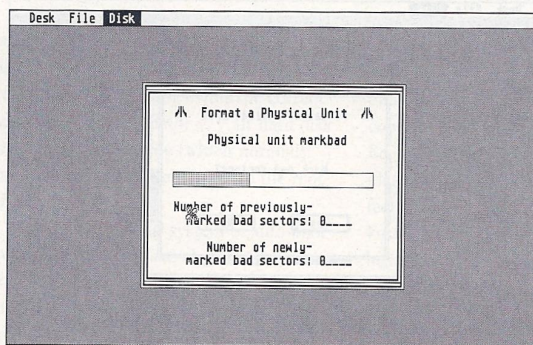
A dialogue box will be displayed in which you can select the unit to be formatted. If you are installing your first hard disk then there will only be one unit. If you are adding another hard disk then make sure you've selected the correct one.

h) Formatting



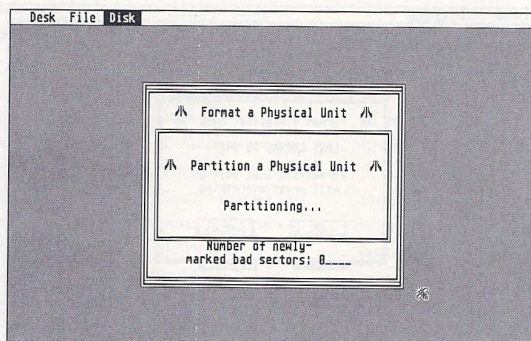
Now HDX goes away and formats this disk. This none-too-helpful dialogue box is shown on screen, it doesn't even have a progress bar! Note that formatting a disk may take several minutes, even more if you've bought a large capacity drive.

I) Marking Bad Sectors



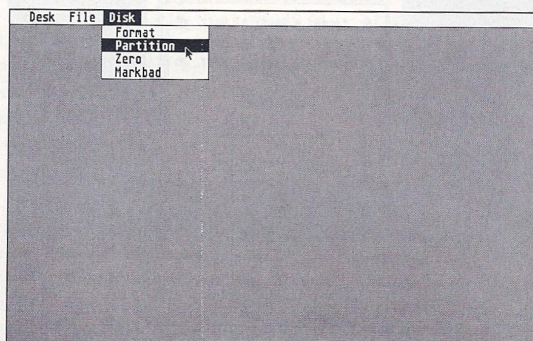
After formatting HDX will then mark any bad sectors (if you hit 'Yes' in the relevant dialogue box, above). This process can also take some time but at least there's a progress bar to look at whilst you wait away the minutes.

j) Quick Partition



Finally HDX will perform a quick partition on your drive to make it usable. This may or may not be a suitable partitioning scheme for you. We'll be looking at manual partitioning in the next step-by-step panel.

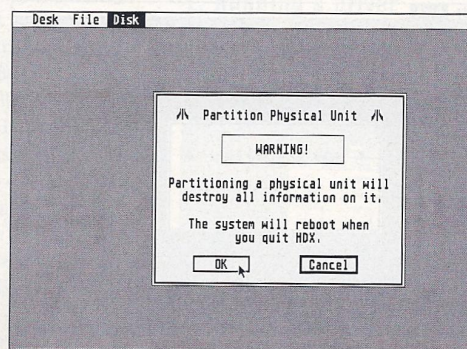
3. Partitioning the hard disk



a) Selecting partition

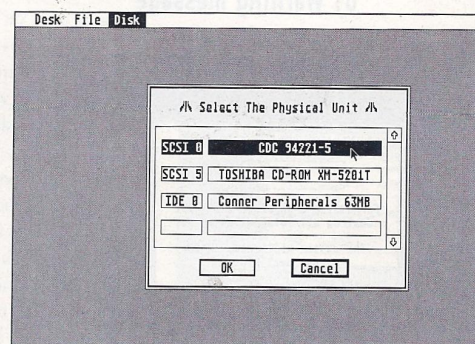
Partitioning is also handled by HDX. Select 'Partition' in the 'Disk' menu to get going.

b) Warning



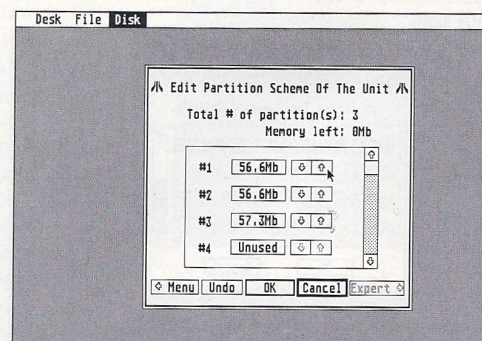
This dialogue box warns you that partitioning will delete all the information on your disk. All my warnings in the formatting step-by-step apply. Click on 'OK' to continue.

c) Select unit

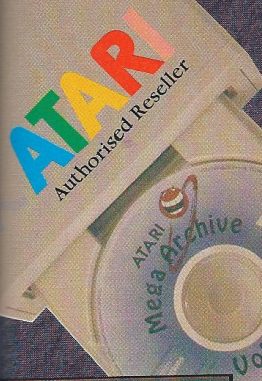


In this dialogue box you select the correct unit to partition. If this is your first and only hard disk then select the one it shows. If you have more than one unit take care to select the correct one.

d) Partition scheme



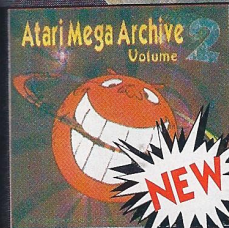
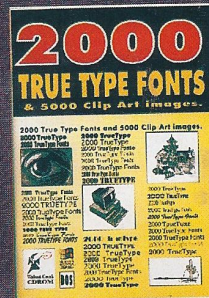
This is the dialogue box where you choose how many partitions you have and how much storage space each one will contain. Use the up and down arrow boxes to change the amount of storage - if you set the storage to '0' then you'll effectively be using one partition less. Make sure that the disk space left equals 0 before hitting OK.



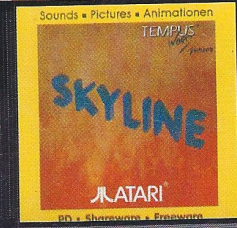
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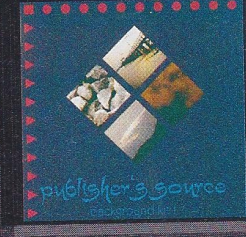
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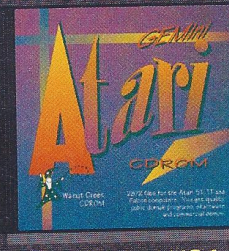
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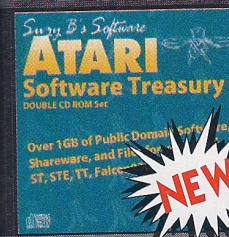
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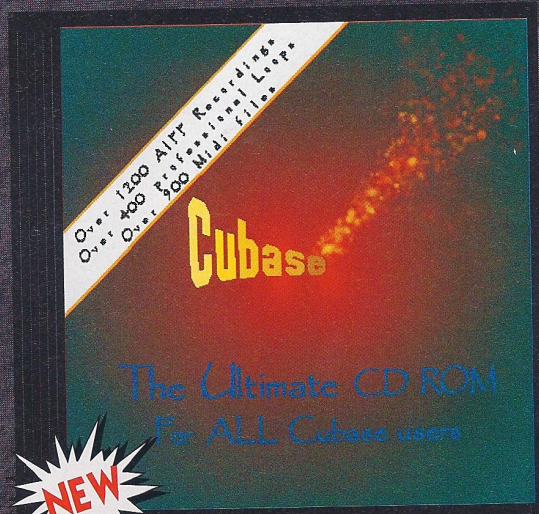
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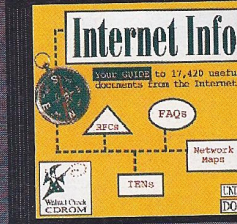
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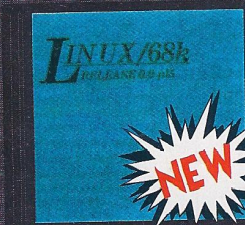
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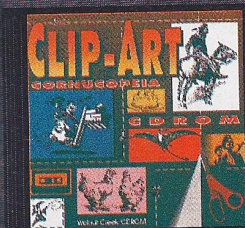
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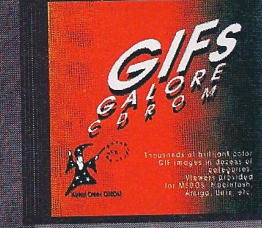
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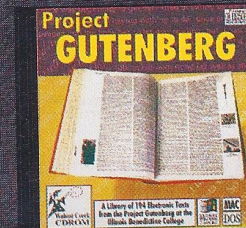
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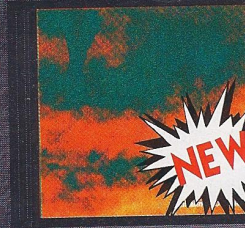
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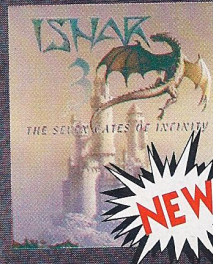


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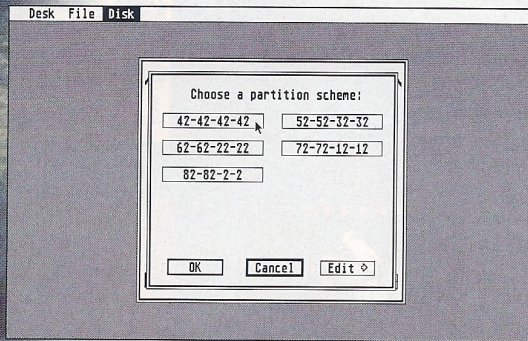
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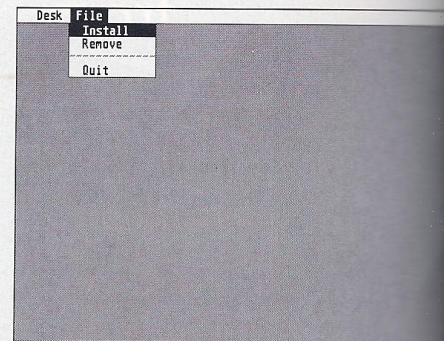
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e) Suggested partitioning schemes



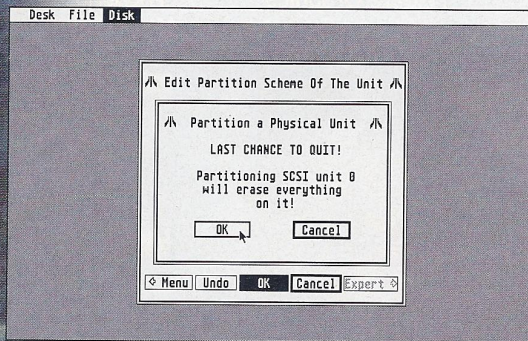
If you want a bit of help with partitioning hit the 'Menu' button on the previous dialogue to bring up this one. Here several different schemes are suggested, select one and hit OK to continue. If you'd rather use your own hit the 'Edit' button to get back to the previous dialogue.

b) Selecting install



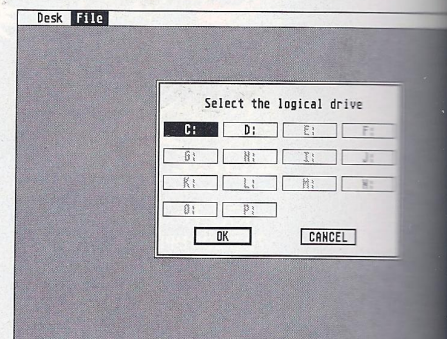
This is a very simple program with just two options - 'Install' and 'Remove'. Select the former and you'll be ready to install the driver.

f) Last chance to abort



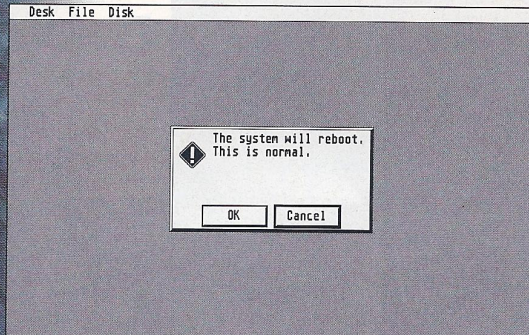
Finally, the last warning box will appear. If you're sure everything's correct then click on OK and your hard disk will be partitioned. Partitioning only takes a few seconds.

c) Selecting the drive



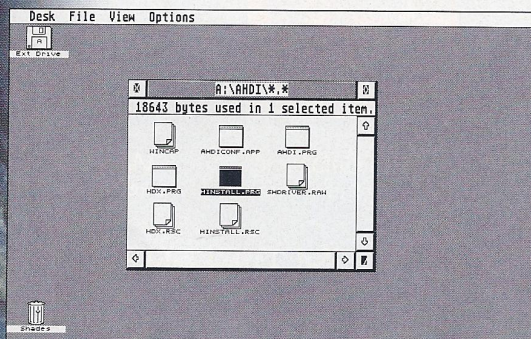
When formatting and partitioning you were dealing with hard disk units. From now on in you're working with partition names (C, D, E and so on). Select the partition you want to make auto-boot (usually partition C) and click on OK.

4. Rebooting



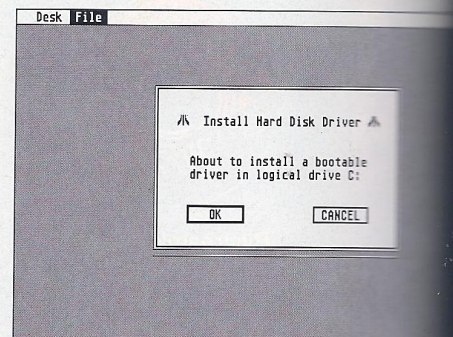
Once you've formatted and partitioned your hard disk click on 'Quit' in the 'File' menu. This will bring up this dialogue box. Hit OK and your computer will reboot. This essential now you have a newly formatted and partitioned disk.

5. Installing an Auto-Booting Driver



a) The HINSTALL program

Installing the driver to auto-boot is done via a program named HINSTALL.PRG. Double click on the program icon to run it.

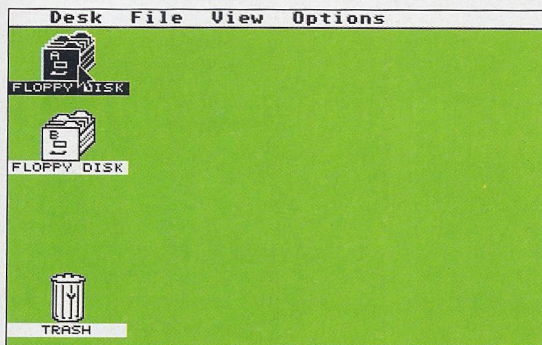


And finally, a warning message. This isn't as strict as the others you've seen because it's very difficult to damage data by installing a driver. Hit OK and in a few seconds your new driver is installed.

6. Installing New Drive Icons.

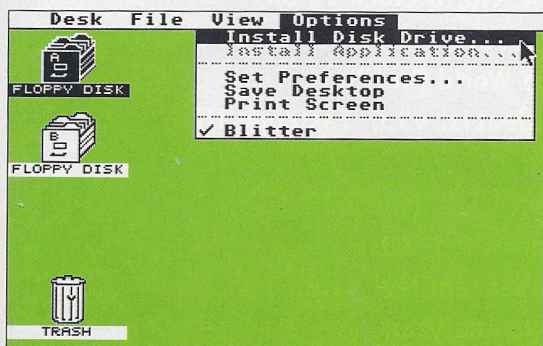
Finally your hard disk is formatted, partitioned and ready to roll - all you need do now is install the correct drive icons (one per partition). If you have a later version of TOS (in a Falcon, for example) then all you need do is click on 'Install Drives'. However, if you own an older version then things are slightly more difficult. You must go through the following sequence for each hard disk partition.

a) Selecting an old drive icon



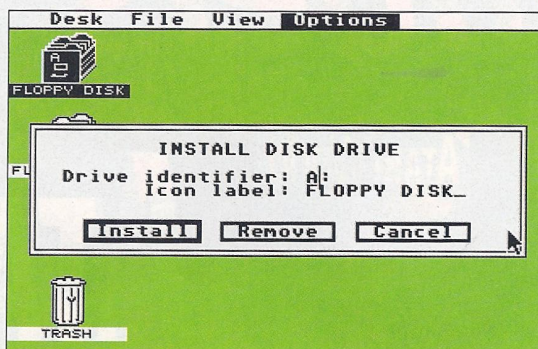
The first stage is to select one of your floppy drive icons. Just click once on the icon so it inverts. This is to make the menu item you're about to click on available.

b) Selecting the menu item



Next you must select "Install Disk Drive" in the options menu. This item is normally greyed out (unavailable) unless you have a present drive icon selected.

c) Install disk drive dialogue box



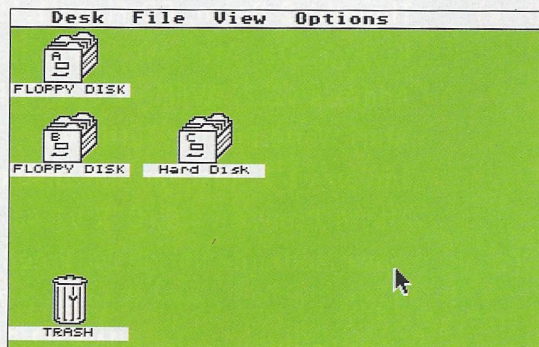
This dialogue box will appear, which will have the information in it for whichever drive icon you originally selected.

d) Changing the contents

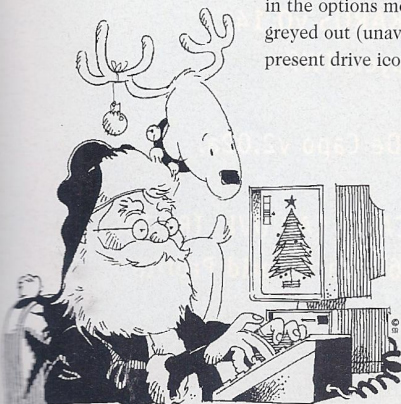


Now you must put in a drive identifier. You may also change the disk label to whatever you like.

e) The new icon



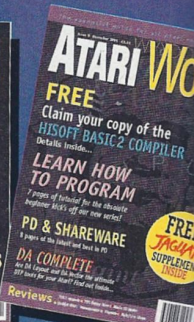
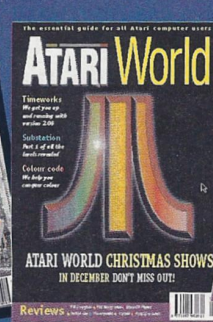
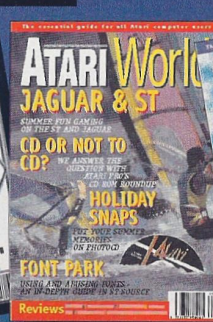
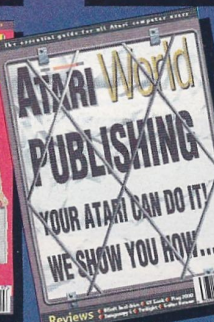
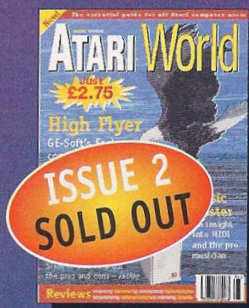
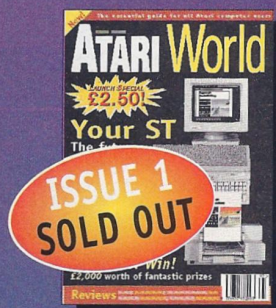
After hitting the 'Install' button your new icon will appear on your desktop. Now you can go through the same process for each new partition you've created.



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January 1996 **ATARI** World 69

TOS Versions

The Atari Operating System (TOS) has gone through several major revisions since it was written in 1985. The writers have removed bugs, added features, added more bugs, added more features, removed some more bugs and so on. Whilst all revisions are of interest to Atari users in general, the most important change for hard disk users was between 1.2 and 1.4.

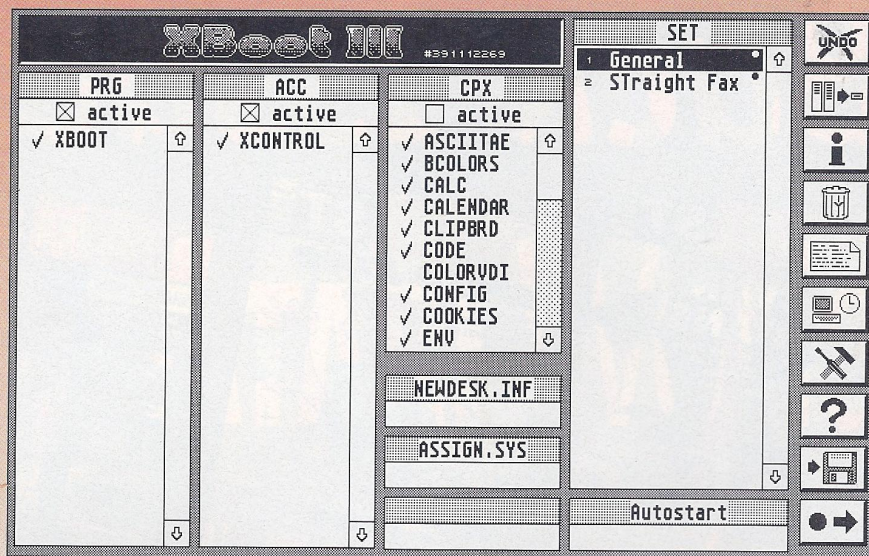
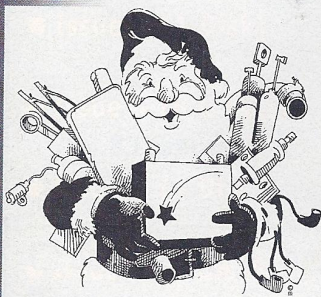
It saw a major revision of the disk handling code which meant that the speed and reliability of hard disks was increased in all areas. If you have a pre-1.04 TOS and you have a hard disk then I urge you to consider upgrading - TOS 1.4 is three times faster at important filing operations than is TOS 1.2. Upgrades are available from companies like Compo, System Solutions and The Upgrade Shop.

Essential Extras

If you are using AHDI to drive your hard disk then - for optimum performance - you will need two programs. The first is the FOLDERxx.PRG. This tells the operating system to reserve more memory for folders (the number is set by changing 'xx' into a numerical value). When you put it in your Auto folder, this will stop your system from crashing when you are using a lot of folders - something which is much more likely when using a hard disk.

The second program is a disk cache of some kind. A disk cache program reads and writes more than one lump of data at a time. It speeds up the rate that data is transferred to and from your hard disk. There are many disk caching programs available - mostly in the public domain or shareware.

To get hold of these programs give your local public domain library a bell and ask how to get them. Alternatively, for subscribers, some are included on this month's Reader Disk.



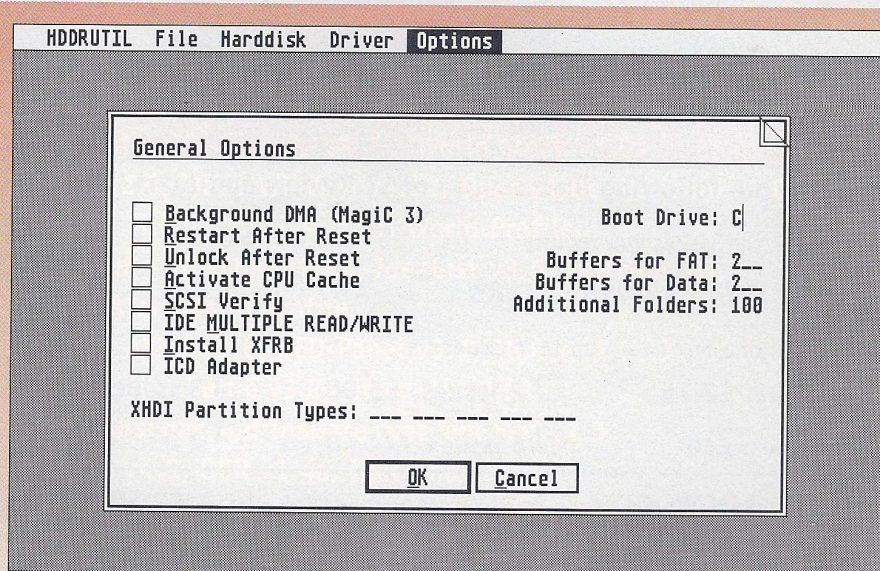
Boot Managers

One of the more wonderful things available for hard disk owners are boot managers. These allow various customised combinations of Auto folder programs, accessories and GDOS set-ups to be chosen when you boot up. There are several different ones available but three in particular are worth noting.

Superboot is the great granddaddy of them all and has grown to be a pretty competent package with lots of options. However, the interface is a bit long in the tooth and none too pretty or intuitive. An excellent example of successful shareware though.

Stoop is a fairly new one designed to work on Falcons only. It's pretty good and shareware so you can try it before you lay out your cash.

X-Boot is probably the boot manager to end all boot managers. It has a GEM like interface even though it runs from the Auto folder as it uses the VDI to produce its own custom dialogue boxes. It does everything you could possibly want. It even has a built in scripting language allowing all kinds of file manipulation at boot time.

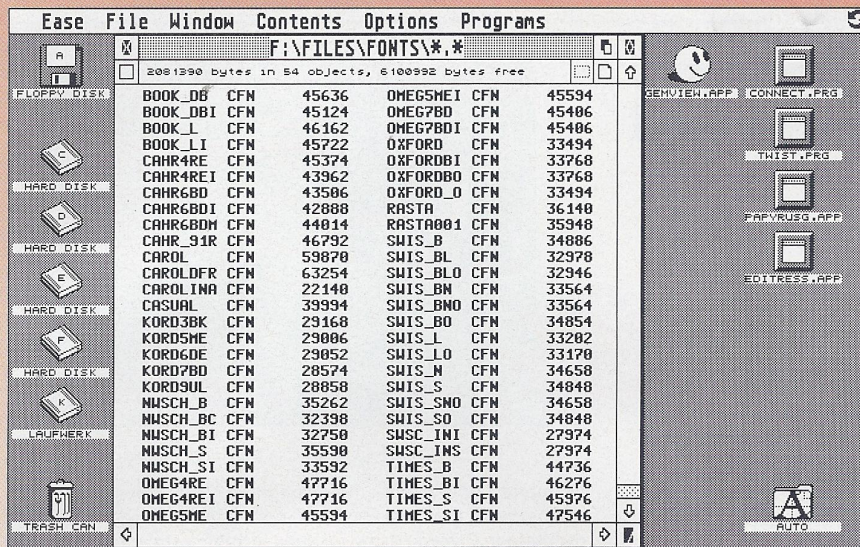


Other drivers

AHDI are not the only hard disk utilities available for the Atari. They are free, which is an advantage, but in almost all other areas they are not as good as the other, commercial packages. You may find that you never even see AHDI - many vendors will include a set of different utilities when you buy a hard disk.

The two main commercial packages are HD Driver (from System Solutions) and the ICD Utilities (available from anyone who uses the ICD Link SCSI Adapter). They are both high quality packages which are faster and have more features than AHDI.

Both fix the folder problem and offer disk caching as standard (see Essentials boxout) as well as offering a whole host of features to help out with a range of different hard disk problems. They're well worth checking out, especially if you encounter any difficulties with AHDI.

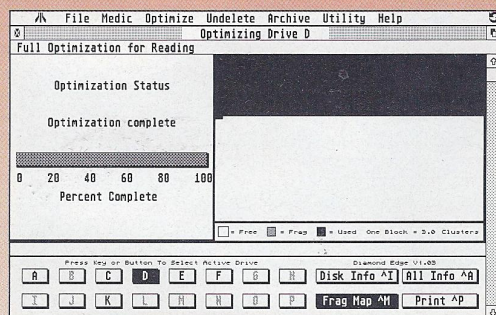


Replacement desktops

One of the main advantages of using a hard disk is that all your programs and files are available to you at the same time. If you have a TOS version before 2.06 then your desktop doesn't give you very good access to your files. Even TOS 2.06, which enables you to put files and programs onto the desktop, doesn't give you the same kind of power that a replacement desktop does.

A replacement desktop is nothing but a program that you run (usually automatically, after you boot your disk) which acts like the standard TOS desktop but with more features and power. They will enable you to put icons on the desktop, drag files onto program icons to automatically load your data, edit your icons, view your files in windows using a range of fonts in multiple columns, find files, run TOS programs in windows and many, many more features.

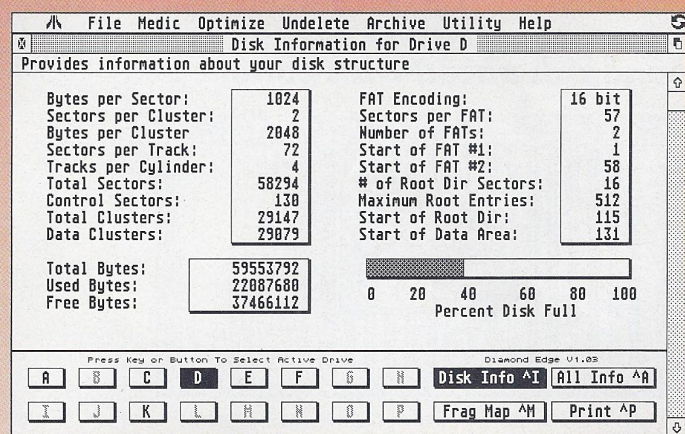
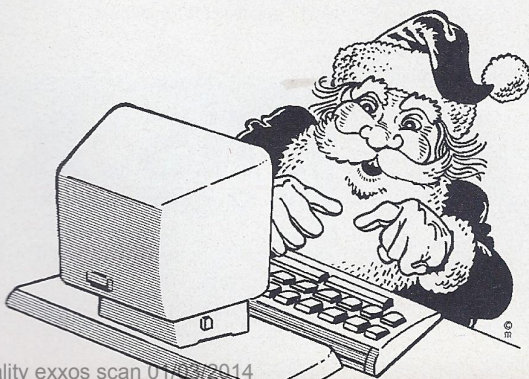
There are a range of replacement desktops available, from the powerful commercial packages Ease and NeoDesk (from System Solutions and Compo, respectively), through to Thing and Teradesk which are public domain or available as shareware.



Disk fragmentation

When your computer writes to any disk it tries to write the data in one sequential area of the disk. If this is impossible then it will write several chunks in different places - the operating system can deal with non-sequential files. While this causes no problems after you've used your disk for some time the number of files removed and added may lead to a high level of this 'disk fragmentation'. Reading and writing data to the disk can become very slow.

As with disk problems, help is on hand in the form of Hisoft's Diamond Edge. This package can take a look at your disk and defragment it - cleverly putting each file into a single block.



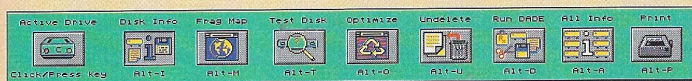
Problems?

If you've used floppy disks for long enough I'm sure you've found you've had some problems with them. Data may have become corrupted or programs unusable. While hard disks are generally more reliable than floppy disks they can still suffer from errors. Because they hold more data even a small error can have a catastrophic affect.

To stop this happening you can back up your hard disk to another disk medium. The simplest example of which would be floppy disks. If you'd rather avoid the tedium of copying your hard disk to a pile of floppies you can buy another device, such as a tape back-up system or a SyQuest removable disk. There is software available, for example Hisoft's Diamond Back 3, which can make the back-up process reasonably painless.

If your hard disk does suffer from corruption, and you don't have a complete back-up, you still needn't lose everything. Again Hisoft have a solution in the form of Diamond Edge. This handy utility can check your disk for errors and then go on to fix them. Although you are bound to lose some files the majority of your disk should be OK - and the disk itself safe to use in future.

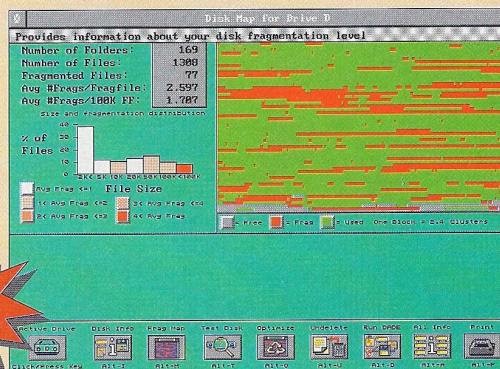
Diamond Edge 2 Ships!



Finally, the wait is over. The biggest upgrade to the best disk utility program ever is complete and is shipping *now*! Over two years of programming have gone into this Diamond Edge upgrade that *no* Atari owner should be without.

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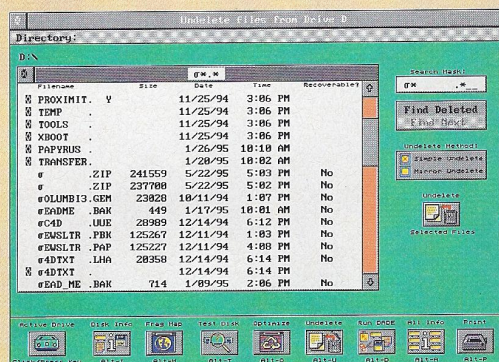


The Disk Fragmentation Map plus Statistics

Diamond Edge, the most popular and powerful hard disk management tool package for the Atari has undergone its first major overhaul in 2 years. New features include a streamlined, re-designed user interface, many new and enhanced functions, internal speed optimisations, plus new programs like Diamond Mirror 2 and Diamond Advanced Disk Editor (DADE).

Re-designed from the ground up with the user in mind, Diamond Edge 2 is the most advanced, easiest-to-use disk management system available for TOS computers. It is fully compatible with all Atari computers and disks, disk formats, TOS versions, and alternative operating systems like Multi-TOS, Geneva, and MagIX.

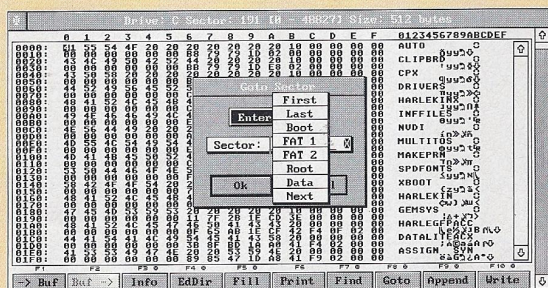
Protect yourself from data loss with Diamond Edge 2 at a great, value-for-money price; comparable software on other platforms costs over £100. Diamond Edge 2 is economical insurance against disk problems and data loss. You simply cannot afford to be without it! Upgrades include a completely re-written and expanded manual.



Diamond Edge 2; un-deleting files is a piece of cake

There are two types of computer users; those who have lost data and those that *will* lose data. Diamond Edge 2 creates a third ruling class: those that are protected from data loss! Your data is too valuable to be without the protection of Diamond Edge 2.

Diamond Advanced Disk Editor

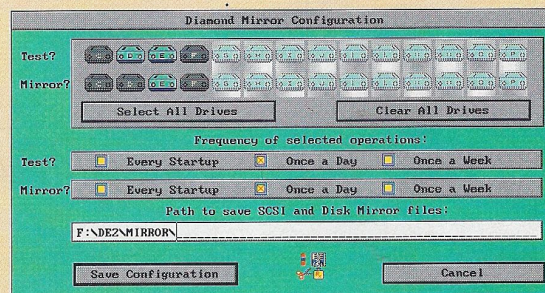


DADE - the powerful disk editor included in Diamond Edge 2

There are other disk editors, but none as powerful, flexible, and easy to use as DADE. Specifically designed with time-saving and impressive features to aid any editing or recovery effort, there is *no* other disk management system that offers as much, including Physical Device Level Disk Editing. The ultimate in data recovery and low level power tools.

- Edit physical disk sectors, logical disk sectors, or files. Supports all Atari disk formats and sector sizes.
- Cut/paste buffer.
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- Easy navigation around the disk with a pop-up GoTo function. Special function to search for lost directories.
- Easy to use edit window with Offsets, Hex, and ASCII displays.
- Convenient function button bar. Many with special time saving features when double-clicked.
- Easy-to-use Directory Edit window decodes the information for you with a trace feature for FAT entries for a file. Very nice!
- Flexible Fill function.
- Powerful search and replace function.
- Rebuild lost files sector by sector.

Diamond Mirror 2



The Diamond Mirror Configuration dialog

Diamond Mirror 2 (use regularly to 'snapshot' your drive) has been greatly enhanced to include complete testing of disks at boot time as well as keeping backup copies of Mirror Files.

Upgrades ➔

Upgrades from version 1 of Diamond Edge cost only **£29.95** - just send your master disks back with your remittance. Silver or Gold support customers can order over the phone with a credit/debit card - please call for details.

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Memory

Paul Rossiter has forgotten more about memory than most of us will ever know...

Every computer needs a place to store data and this storage is usually in the form of DRAM memory chips. These can hold large amounts of data and can provide access to the data fairly quickly. The major drawback to this type of memory is that it is volatile; this means that once its power is removed the contents literally evaporate in a fraction of a second.

As programs get more and more complex they require more and more storage, whereas only a few years ago a word processor could fit in just 16K a fully featured one on an ST requires at least 1Mb. If you think that's outrageous, remember that many a PC version refuses to load in less than 8Mb!

The ST, designed in the early 80s was very advanced and even the first models had memory support for 4Mb - this at a

time when most machines only had 64K!

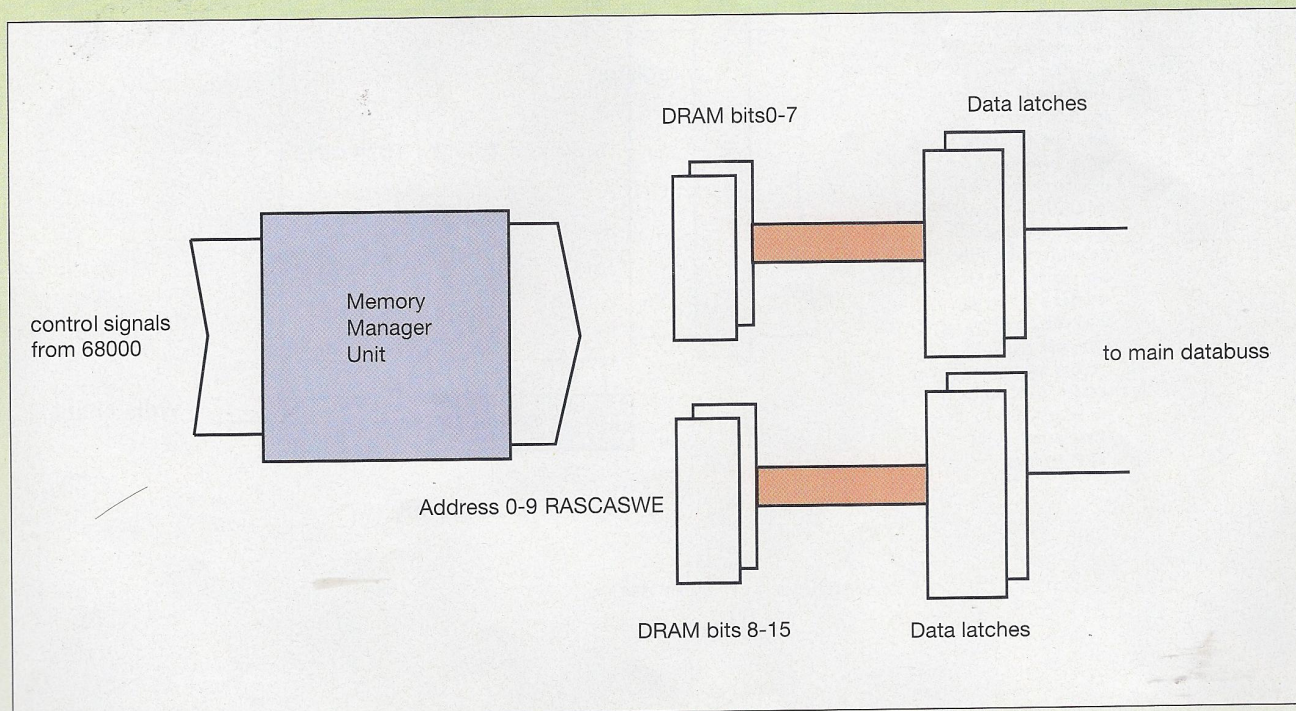
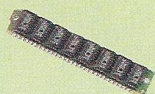
The STFM

The normal STFM has 512K or 1Mb of memory and this can be enhanced right up to the 4Mb limit. This limit is imposed because of the MMU. The MMU or Memory Management Unit is an Atari designed specialist chip that interfaces between the 68000 CPU and the memory. Because the memory needs its own special signals to control it which aren't directly available from the 68000 the MMU takes over and drives the memory chips. To address 4Mb of memory requires 10 multiplexed address lines - to go over this limit of 4Mb it would need another address line and there just isn't one available.

The STFM uses chips soldered to the main board and comes in many flavours. The chips used can be 256K by 1 DIL/SMD or 256K by 4 DIL/SMD. To upgrade an old

half meg machine to one meg you require the same types of chips to be soldered into the spare positions on the board. If the chips used are normal DIL types then this is a straightforward job but if the chips are surface mounted types then without very specialised equipment, it's near on impossible!

To upgrade over the one meg limit you need an add-on board - these boards hold 2Mb or 4Mb of memory, usually in the form of SIMMs and have to be connected onto the main board by ribbon cables and connectors. Most upgrades have a 68 pin connector to plug over the MMU and a 40 pin DIL connector to fasten over the shifter chip. Take great care when fitting the MMU plug as they are notorious for damaging the socket, thus incurring a very expensive repair bill. A far better solution is to remove the MMU plug and solder the ribbon cables onto the main board but



Block diagram showing STFM memory management.

check with the supplier first for the details. Once fitted make sure the board has a good thick lead connecting to ground, if not then there is potential for intermittent data loss and corruption.

The STe

By the time the STe was designed memory

conventions has moved on and so these new conventions were used in the STe. The PC field had taken on board an idea from Wang which was to put the memory chips on a small circuit board which could be easily plugged into a socket. This was termed a SIMM (Single Inline Memory Module) and typically held 256KB by 8 or

9 bits on a 30 pin module. The main advantage of SIMMs is for upgrade purposes, to increase the memory you simply add more or replace the existing modules - no soldering, no mess, no fuss. Nothing is without its problems however and as anything in a socket is prone to mechanical failure the contacts between

The DRAM

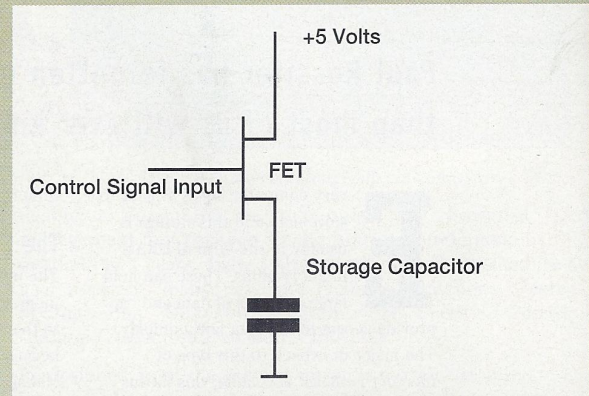
To get as many bits as possible onto each chip requires multi billion dollar fabrication plants and some very clever techniques. The basis of the DRAM however is exactly the same as the first 1K chips of the early 1970s.

Each bit or cell has a single FET transistor, this has a capacitor which is used to hold an electrical charge to indicate if data is high or low for that cell. Unfortunately the charge on this capacitor leaks away over time (a few tenths of a second) and has to be refreshed to keep the data valid. To get up to 16 million individual cells onto a small piece of silicon means that each capacitor is incredibly small, the charge on the capacitor is literally only a few tens of electrons.

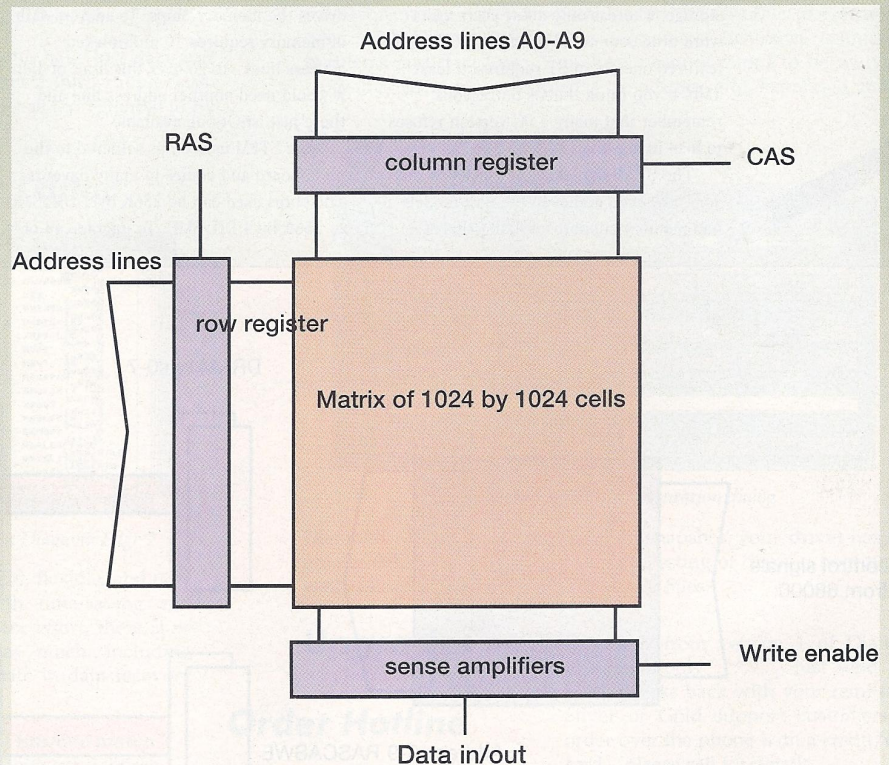
The whole DRAM itself is organised as a square matrix of cells with rows and columns, to access any single cell the chips has to be given a row address and then a column address, where these two intersect is the data to be stored or retrieved. The row and column addresses are sent along the same set of wires (multiplexing) and this reduces the pin count greatly on the chip at the expense of complexity at the memory manager.

Early DRAMS held just 4K and required three voltage rails (+12, -12 and +5V), while modern DRAMS are 4Mb or 16Mb and only require a single +5V supply. Similarly access speeds have improved from early times of around 400-500ns (nano seconds) to modern 50-60ns.

As DRAMS are volatile so stray bits could potentially be dropped, this could cause program corruption or even worse, invalid data. To detect this, many computers use parity, a system that adds an extra bit to each SIMM and allows a check bit to be stored along with the regular data. If the data changes, this is detected and flags up as an error. The Atari never used parity checking and so cheaper "by 8" SIMMs can be used with no ill effect instead of the "by 9" modules.



Schematic of a single DRAM memory cell



Block representation of a 1 Mega Bit DRAM chip.

Memory History

Ever since the first computers were devised they needed memory. The earliest electrical computers used mechanical memory! Mercury delay lines had acoustic pulses sent along them to temporarily store data, later models used a flat spiral of wire and send a similar acoustic pulse along the wire.

Later machines used ferrite cores, these tiny toroids indicated data by their magnetism (one advantage of ferrite cores is that they were non-volatile) a typical core store the size of a freezer held around 8K!

As technology progressed the transistor allowed the flip flop to be used as a

store, and this idea, miniaturised, is the basis of the modern day SRAM chip.

With the advent of the integrated circuit in the '70s the DRAM was born, this had the great advantage of only requiring one transistor per bit but at the expense of being volatile.

Another technology developed but dropped over the years was the bubble memory, these were once heralded as the conqueror of the DRAM offering non volatile, very dense high speed storage but as DRAMs increased in capacity the bubble RAM never caught on.

the SIMM and the socket can oxidise and generate random bit failures.

The standard STe was, as with the STFM, available in half and one meg configurations. The upgrade path, by replacing the SIMMs is to 2 or 4Mb. One point to watch is that a few STes had SIPS instead of SIMMs, these are almost identical to SIMMs but have a row of pins instead of edge connectors on them. If these are fitted then obtain SIPS if possible, or converters which are available to convert a normal SIMM into a SIP.

The STe had all of the major control chips re-designed, the memory manager was moved into a large 184 pin surface mounted device but unfortunately still only had 10 address lines, if Atari had added some more lines then a 16Mb machine would have been easily achievable. One interesting feature of the STe is that unequal banks of memory are not correctly recognised, this means that a 2.5Mb system does not work correctly, if

fitted then a software patch must be run on booting to re-configure the memory manager.

The Mega

Sold as a business machine, the Mega was implemented with more memory, the first models had 2 or 4Mb as standard using industry standard 1M by 1 DILs. Later Megs included the Mega 1 which only had 1Mb fitted. The memory control circuitry was identical to that in the STFM and so has the same limits of memory capacity.

The Mega STe

The Mega STe is based around the standard STe with a processor accelerator and a few more bells and whistles. The memory circuitry is identical to the STe and so still retains the 4Mb limit using normal SIMMs. Whilst the 68000 runs at 16MHz in this machine all main memory accesses have to drop back to 8MHz and so relatively slow 120ns SIMMs can still be

used in these systems, a fact that partly explains why upgrading an ST to 4Mbs is a lot cheaper than upgrading a PCÉ

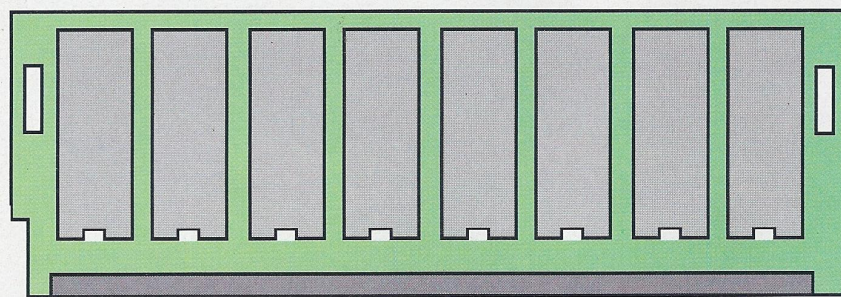
The TT

Once sold as a mighty workstation the TT only sold to a niche slot in the UK. Its promises of power and speed were exaggerated somewhat. Its memory was in two sections - for backward compatibility there was ST RAM and this was implemented with 2Mb on board and an optional 2Mb board could be fitted into Atari specific connectors. The ST RAM was organised as 64-bit wide which allowed quite good access to it considering the speed slow down while addressing it. The other RAM called Fast RAM or TT RAM was optional, was much faster and allowed 32-bit wide access at 16MHz (not the 32MHz of the processor as the design was not optimised). The Atari board only allowed 4Mb or 16Mb of memory but third party boards could offer up to 256Mb of memory for top end DTP work.

Unfortunately many early programs had not been written very well and made too many assumptions about the hardware. The TT RAM confused the programs and many refused to even see the TT RAM although this situation is now mostly resolved and any reputable software now runs fine.

The Falcon

The Falcon was available in 1Mb, 4Mb and 16Mb variants - adding a couple of extra address lines allowed the Falcon to address up to 16Mb of RAM. The memory is on an Atari specific board which plugs into two on board connectors and uses normal DRAM technology. The on board DSP chip needs very high speed memory to keep it satisfied and to this end it has its own 96K of very high speed SRAM.



256KB by 8 30 pin SIMM

Memory myths

Q Does the power supply overheat if more memory is fitted?

A No, the power supplies were designed to cope with 1Mb of older style memory which consumed the same amount of power that 4Mb of modern memory does.

Q How do I get over 4Mb in an ordinary ST?

A Not easily, due to the memory manager limitations an alternative route needs to be followed. The Frontier Plus 8 board offered this but only with considerable problems. The 68030 accelerator boards from System Solutions can

carry extra RAM on them but at a significant price.

Q What speed RAM chips do I need, will faster ones make the ST faster?

A In the normal STs 120NS or faster chips are fine, fitting faster chips will work but the system runs at the same speed.

Q Can memory chips be damaged by handling them?

A Yes, the thickness of the layers in a memory chip are incredibly thin and easily punctured by static discharges from unearthened bodies. Always hold SIMMs by their edges and do not touch the row of contacts. When fitting them keep one hand on the metal case of the computer to ensure that any static electricity is dissipated.

Q I've been offered some SIMMs from a PC - will they work in my STe?

A Probably, if they are 1Mb by 8 or 9, in a 30 pin format and your STe has SIMM sockets then they should work perfectly.

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memory upgrades

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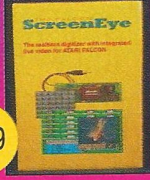
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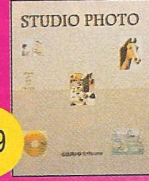
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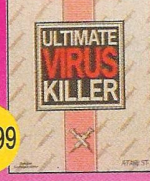
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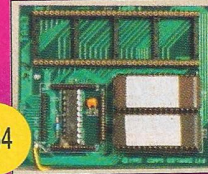
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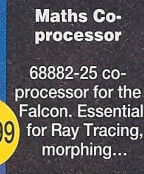
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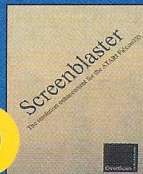
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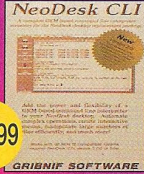
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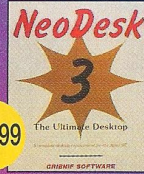
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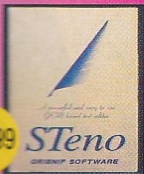
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Command line interface for NeoDesk.



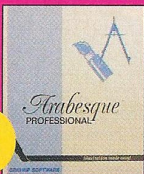
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STeno
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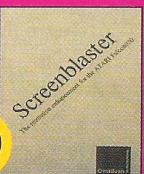
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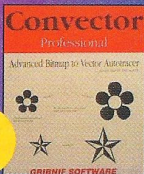
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bundle	£99
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Public Arena

NEWS

Dead Space!

The eagerly awaited XControl replacement, called Space, designed to enable CPXs to be multitask will not now appear. The programmer, Christian (LHarc) Grunenberg, has sold the source code to the Freedom programmers. They originally intended to create a Freedom eCPX but have decided to turn this idea on its head and add the Control panel features into Freedom2! The biggest limitation of CPXs is the fixed window size so to get around this eCPXs have been developed which allows windows of any size and

these co-exist alongside standard CPXs. Already around 20 eCPXs have been developed including clocks, games, font selectors etc.

A new shareware program called UDO (short for Universal DOcumentation) looks set to take Atari by storm. Documents created in UDO format can be converted to ASCII, ST-Guide, LaTeX, HTML, PureC help, WinHelp and Rich Text Format. The first Atari English release should now be available with PC and Unix versions in the offing.

Currently there's no way to extract the Binhex format commonly used to exchange files over the Internet between Mac users. Both the PC and Mac versions of ESS Code will shortly support Binhex format.



It's show time!

The first Atari World shows should see some exciting new products launched just in time for Christmas. Many of the new releases were first launched at the November ProTOS show in Germany, the largest Atari show in the world, and it was interesting to see commercial and non-commercial products on sale side by side - read my report elsewhere in the magazine.

My hard disk is jam packed with German software launched at the ProTOS show waiting for me to translate and set free via InterActive so for me this month feels like the lull before the storm!

When we expanded the Public Arena coverage I wondered if we'd run out of new releases and end up reviewing old and outdated software but sitting here in the eye of the storm the outlook for the non-commercial software scene looks rosier than ever.

Joe Connor

(jconnor@cix.compulink.co.uk)

All the software (unless otherwise stated) can be sourced from:

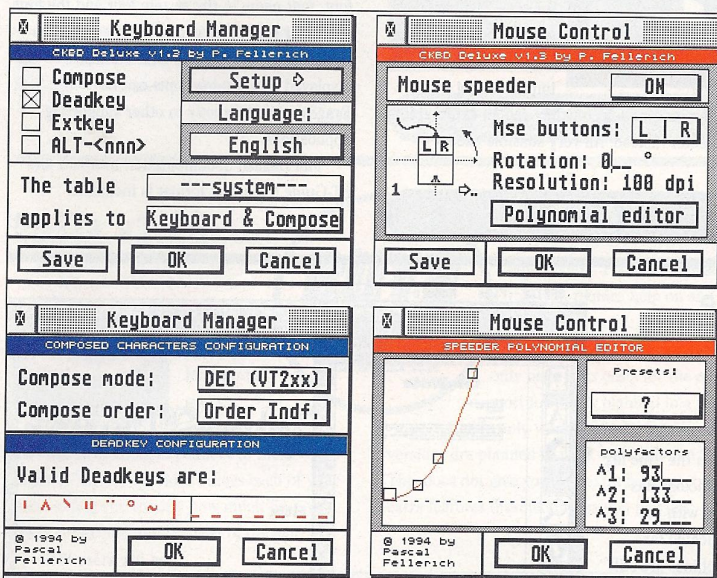
Floppyshop 01224 312756

Goodman 01782 335650

LAPD 01773 761944

Merlin 01452 770133

Power PD 01622 763056



CKBD v1.3

Freeware/all Atari



CKBD (Composed Characters Keyboard Driver) is a combined keyboard and mouse manager. After

installing CKBD.PRG in the Auto folder the various options are controlled by two separate CPXs. The Keyboard control CPX offers five different ways of methods of entering characters not normally available from the keyboard: Compose, Deadkey, Extkey,

at which point the desired character appears. Extkey also uses a similar technique except the Control key is used mid command, e.g. o, then Control+ generates an umlaut o.

Alternate+nnn is the method built into TOS since v2 where the Alternate key is held down while the ASCII code is entered on the numeric keypad, e.g. Alternate+130 generates an accented e.

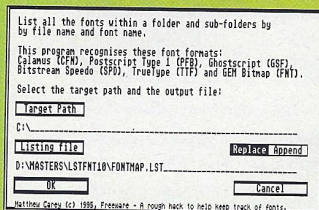
Finally keyboard remapping loads a KBD or CKB file to imitate the keyboard layout of another nationality. The Mouse control CPX is very sophisticated affair offering button swapping for left handed users and resolution independent polynomial " $y=ax+bx^2+cx^3$ " acceleration! I'd love to explain it all in detail but I've run out of room!

JC



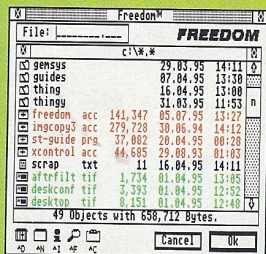
Listfont v1.3

Listfont can scan a path, including sub directories, for fonts in TrueType, Calamus, PostScript Type 1, GDOS GEM, Bitstream Speedo and GhostScript formats and compile a detailed list which includes the path, filename and font description for each font found. Listfont is easy to use, simply select the target path and destination for the output file and select the OK button.



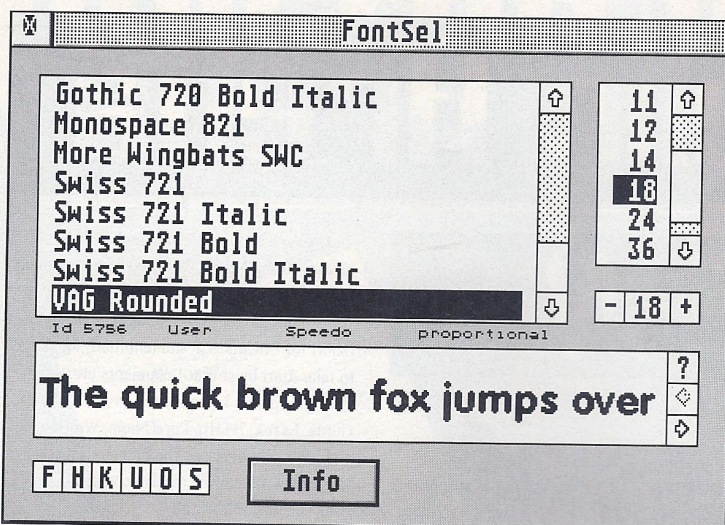
Freedom v1.15e

This bugfix upgrade takes care of problems under MagiC Mac along with many other minor but harmless bugs in the previous release.



Background music 3

This player is capable of playing modules with four and eight tracks simultaneously. The Falcon's DSP chip is used to produce high quality playback without burdening the CPU. The player can create surround sound and it has an option to interpolate the output. It runs only as an accessory and occupies about 40Kb of memory. Due to its DSP playback routine, any application which also uses the DSP will crash when Background music 3 is installed. Occasionally the file datestamp could be destroyed which could lead to problems with some software assumed the datestamp would be a sensible value. There were also several traces of German text sprinkled around which have now been eradicated.



The small buttons at the bottom left of the dialog select the various text effects - although these make more sense in German.

FontSel v1.09

Freeware/All Ataris



FontSel is a GDOS font selector. The idea is simple enough, instead of each programmer implementing a different font selector they call an external font selector instead. All very sensible except

number, source, type (bitmap or vector) and spacing monospaced or proportional) is displayed.

The ? button adjacent to the example area toggles the preview area between example text in the selected font, the font name in selected font, font name in the system font and the font character set, which can be scrolled through using the arrow buttons. With Fontsel displayed in a window fonts can be Drag&dropped directly to other supporting applications.

Full English documentation in ASCII and ST-Guide hypertext format is included.

JC

Junior Office v3.04e

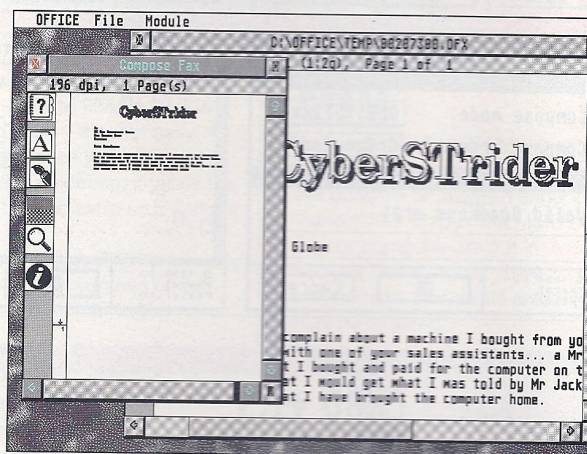
Shareware/All Ataris



Given the time fax technology has been with us, dedicated fax machines are still very expensive. However, fax technology need not be out of reach of the casual home user: fax-modems have never been as affordable as they are now. All you need is a program to send and receive faxes and this is where Junior Office tramples over the competition.

Junior Office is a complete modular fax management package. It has been available in German for quite a few years and is now available in English. The developers TKR have moved on to other platforms, but because of the success of Junior Office on the Atari, are still supporting and updating it.

Junior Office is completely multitasking, GEM friendly and can also run as an accessory. It runs on any Atari with a Class 1 or 2 fax-modem connected. In addition to features such as viewing incoming and outgoing faxes, auto-receive and maintaining an address and telephone directory, composing faxes is very



Junior Office features a DTP style window to compose faxes seen here in full page and double size views.



easy. Junior Office sports DTP like features where images and text can be freely placed on the page, to be faxed as seen on screen.

The shareware version is fully functional and costs \$16 to register. Even MagiMac users can make use of Junior Office, and at this price you would be mad not to!

DB

The Lost Blubb

Freeware/Falcon only

DEMO

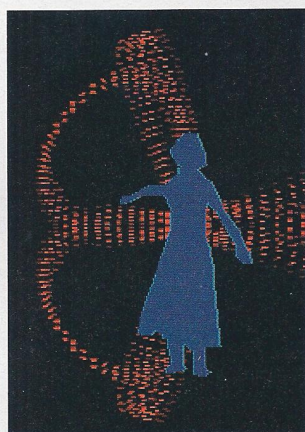
The Falcon has never been given full credit as a machine capable of stunning graphics effects. The Lost Blubb demo aims to change all that.

It won first prize at the last Fried Bits Coding Convention, and quite rightly so in my opinion. The demo lasts around five minutes and is both visually and musically stunning with crisp clear sound.

The Lost Blubb is based around a woman dancing (the programmers girlfriend -allegedly) doing different moves, with a wide variety of backgrounds giving the demo an up to date music video feel. You occasionally move away from the dancing woman to get other special graphical effects such as burning wood, and moving along a road that leads to the clouds.

The demo comes on four high density floppies, takes up 7Mb of hard disk space and needs 3.6Mb of free memory to run on an RGB monitor or TV!

Whether you are a demo junkie or not it is one demo worth owning if only to make those PC owners shut up once and for all.



The Lost Blubb - the demo every Falcon owner should keep handy!

DB

CoSta v1.20

Shareware/All Ataris



CoSta is a utility for comms users, particularly those

who use NOS/Oasis to connect to their Internet Service Provider. It logs each of your calls, telling you exactly how much time you spent connected and the cost of the call.

NOS users will be aware of the log file NOS.LOG which is created and updated each time you connect. This saves the current date and time along with a lot of other information. NOS.LOG tends to become very large with no apparent use, and this is where CoSta steps in. It runs over NOS.LOG and extracts all the information about each call made. Calls can even be flagged as paid, resetting the current total for the next phone bill.

CoSta is fully GEM based, is very easy to use and comes complete with its own on-line

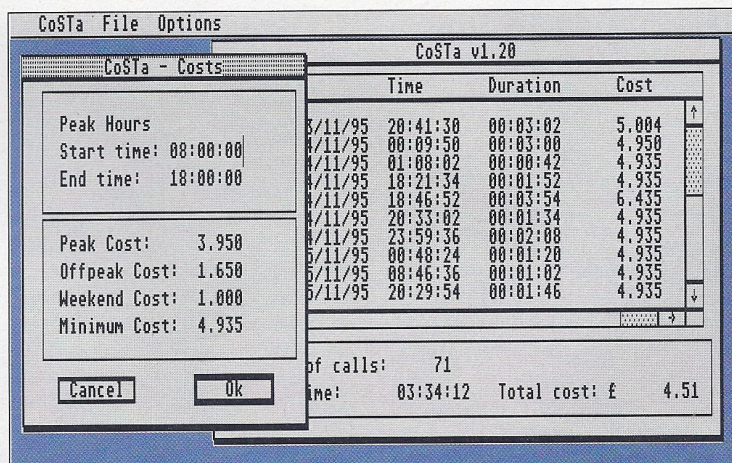


help system. Place the mouse pointer over the window that you require help on and press HELP.

One feature missing is support for call costs for different costing regions, i.e. local, regional and national. CoSta only maintains costs for the one you specify. Luckily, support for this is planned in a future release.

CoSta only works with the log file created by NOS. Later versions are planned to work with ICE and STIK. Registration is only œ6. This does not give you any extra features, but future versions will have extra features disabled unless you pay up.

DB

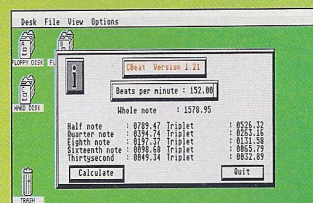


You'll always know how much your modem calls coSta!



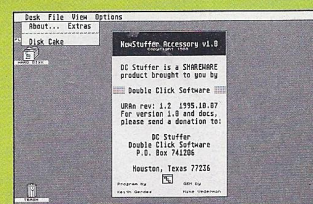
CBeat 1.21

CBeat is a small desk accessory which calculates the length (in milliseconds) of various notes from a given tempo (set in BPM). It occupies about 25Kb and it runs on all Atari computers in at least medium resolution. CBeat is useful to have around if, for example, you have an effect processor.



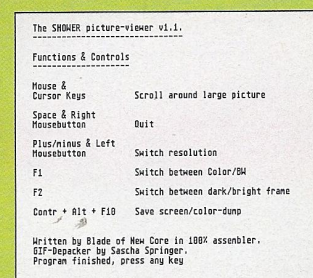
Newstuffer 1.0

Newstuffer is a patched version of the popular DC Stuffer - the utility which lets you load up to 32 accessories on booting. This version fixes a few bugs, adds some new features and is compatible with more TOS versions (including TOS 2.06). Unfortunately it's not compatible with Falcons. If you feel cramped by the six accessory slot limit take a look at Newstuffer.



Shower v1.1

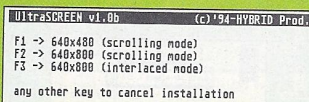
Shower is a fast picture viewer for the Falcon, written by Tord Jansson (the guy behind the audio system in Substation). Over 20 different picture formats are supported including the common formats such as Degas, NeoChrome, GIF, IMG and TGA. To achieve the best possible results, Shower automatically jumps to the right resolution when viewing a picture. Recommended!



UltraSCREEN v1.0b

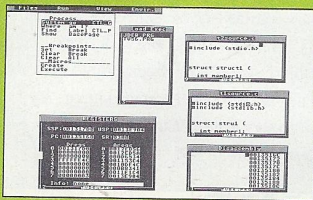
A ScreenBlaster for your STe!

UltraSCREEN is a software screen expander from France. It runs in high resolution and can extend the desktop size to any of the following resolutions: 640 x 480 or 640 x 800 in scroll mode and 640 x 800 in interlaced mode -which flickers badly.



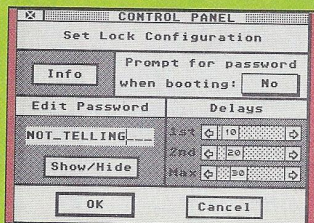
JDEB

JDEB is the first source level debugger for the HiSoft Lattice C 5.x compilers. It is modular and features its own menu, windowing and form handling environment. It does what other debuggers do but goes further: it has a built-in ANSI C parser and interpreter.



Lock Computer CPX 1.0

This CPX lets you lock your computer from prying eyes when you are away from it. Select the CPX module and enter the password of your choice. The next time you select the CPX, everyone will be locked out until the correct password is entered. It can even be set to ask for a password on boot-up.



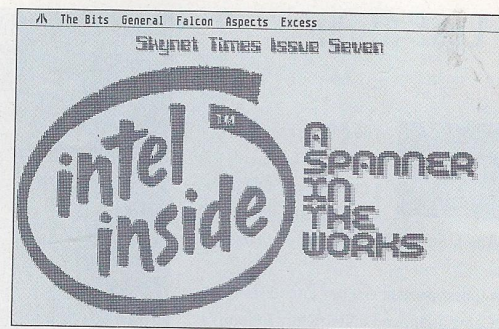
Skynet Times Issue 7

Shareware/All Ataris



Skynet Times doesn't try to appeal to a wide audience preferring to concentrate on the interests of the editor 'Vogue'. The mag is filled with review, previews of games and an interview with Mr Pink of the Reservoir Gods coding crew and it's easy to tell this is an insider read for demo coders and gamers.

The contents are original following an editorial decision not to cull articles from the Internet, but on the downside, compared to the other mags, there's not so much to read. I particularly enjoyed one article written in 'real time' (we're led to believe) during a coding/gaming session and is the kind of article you wouldn't normally find in a printed



Hey look, we're famous!

magazine - it really bought the mag to life.

The front end includes an opening monochrome Degas image loader as a desktop background with drop down menus. It's dull and not at all what you'd expect from a mag devoted to demos, coding and games. With no print option, no images or extras on the disk this mag is hovering over my bit bin.

JC



ASC GIF v1.6

Freeware/All Ataris

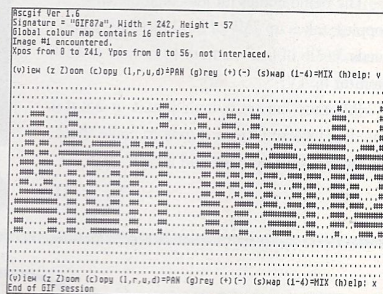


ASC GIF is a TTP program which takes a GIF format image file and turns it into an ASCII representation of the original. ASCII images were all the rage back in early eighties when most printers could only manage text output but in the nineties we're talking flashy email signature files and greetings.

The success of the conversion is largely dependent on the size and complexity of the original image. Annoyingly the conversion inverts the light and dark areas of the image so you have to manually invert the image before conversion or invert your screen colours to view the file properly.

From most desktops you can launch

And a bit of glamour to your email letters - send us your best efforts.



ASC GIF by dragging a GIF file onto the program icon (or by entering a target path into the TTP. Once loaded options are selected by pressing a letter followed by the Return key. Pressing h displays a help screen covering all the options. If you're dealing with colour or greyscale images there's some useful options to manipulate colours and adjust the greyscale sensitivity but probably the most useful option is c which displays the image on screen and spools the output to an ASCII file ready to cut and paste into your documents.

JC



EFF's Guide to the Internet

Freeware/All Ataris

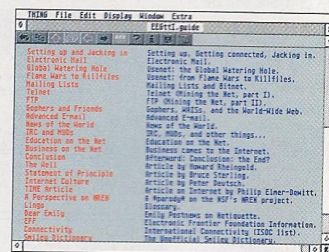


This round trip through cyberspace is published by the grandiose sounding Electronic Frontier Foundation (EFF) which (it says here) is "dedicated to ensuring everyone has access to the newly emerging communications technologies vital to active participation in the events of our world". The guide has already inspired several books on the Internet and is now itself to be published.

The hypertext, in ST-Guide format, weighs in at over 300Kb, or to put it another way it offers in-depth coverage of every conceivable



The smiley dictionary is invaluable :-)



aspect of the Internet. Although it's written by an American the coverage does to some extent take on board the 'global village' concept we can't help hearing about, for example, the Internet service providers list includes entries for every state in the US plus, Germany, Italy, Australia and the United Kingdom - it's nice to know we're still hanging in there!

The EFF Guide is a combined DIY manual, reference work, and potted history which really does offer something for everyone and at the price you'd be mad not to borrow a copy from your PD/Shareware library.

JC



AVR Play

Freeware/All Ataris

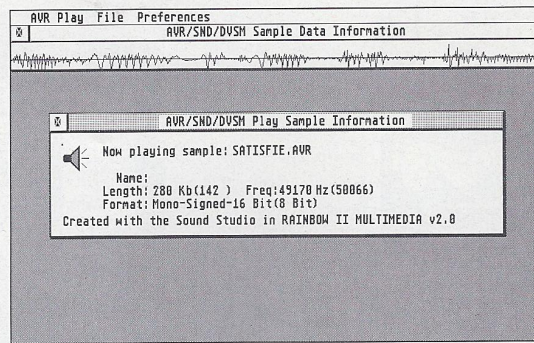


Ever wanted to listen to your samples without messing around with your sample editing

package? If so, read on! AVR Play will replay a number of different sample formats on all Atari computers. Samples which are not at the frequencies 6258, 12517, 25033 and 50066 Hz, are automatically converted to the highest nearest frequency. Currently it supports AVR, SND and DVSM sample formats.

The sample may be looped, but AVR Play doesn't make any use of the pre-defined loop points in the sample. The loop will always play from the beginning of the sample to the end.

Overall it's a very interesting little utility,



and well worth having around. But to become essential, it needs to speed up a little and support more frequencies. But on the whole... it's a very good start.

Listen to your samples with AVR Play

CL



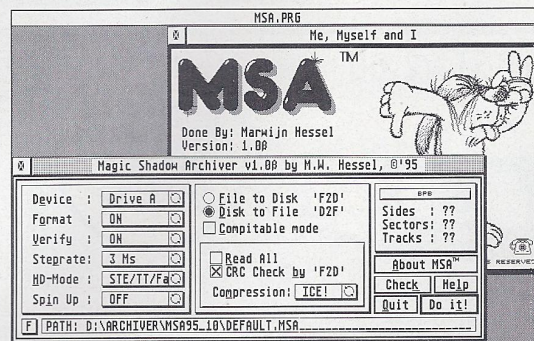
Magic Shadow Archiver v1.0

Freeware/All Ataris



The Magic Shadow Archiver - also known as MSA - is a useful disk backup utility. It reads an entire disk

into a single, compressed file. One of the major disadvantages of the format is the poor compression rate, which is usually between 10 to 20%. This new version of MSA takes the concept one step further, by adding two new compression methods: Ice! and Fire. Both are far more efficient than the old format, and figures between 40 to 50% are not unusual. As a consequence of the radical improvement in



The new MSA, efficient, but painfully s-l-o-w

compression, both methods suffers from being extremely slow. If you don't mind waiting up to 20 minutes to back up a disk, then it might be useful. Otherwise forget it!

CL



Rec Free v1.12

Freeware/Falcon only



Rec Free is a new hard disk recorder for the Falcon. All the action takes

place at the control panel, where you record, replay and set all necessary parameters, such as recording frequency, file format, analogue or digital input, etc.

There is no editing ability or any DSP effects available and you can only record and replay one track, no more, no less. The supported file formats are Cubase Audio (AIFF), DAME (TKE), Atari (AVR) and raw sample data. You can trigger your recording sessions by MIDI, a timer or using an audio gate.

Rec Free has sensibly adopted the same record and playback keyboard shortcuts as Cubase, which makes it very easy to get along



Rec Free - a new hard disk recorder from the Netherlands

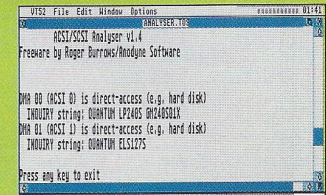
with (well for Cubase users at least!). Rec Free is definitely not the most advanced hard disk recorder for the Falcon, but it's certain one of the least complicated.

CL



ANALYSER v1.4

ANALYSER is a program to analyse the SCSI/ACSI buses of the Atari range of computers. It is particularly useful when your SCSI devices stop being recognised by your Atari. This could be because of a faulty cable, or even a dead ACSI/SCSI chip. ANALYSER lets you do the initial diagnostics saving you on unnecessary repair costs.

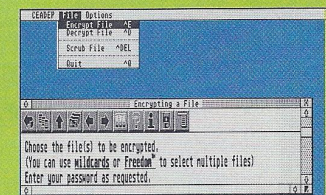


Atari-ST BBS Call-Back Facility v2.0

This program provides a fully automatic 'Call-Back' facility making it easier for a BBS to run from a non-dedicated phone line. It is an Auto folder program and stays in memory ready for when it is needed. The caller calls back within a pre-defined time after hanging up the first time and this program will raise DTR and the modem will answer the call normally. The BBS software will then take over.

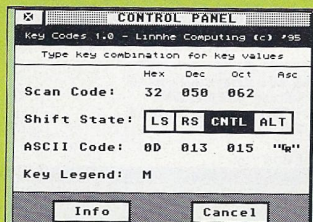
CEADEP

CEADEP is a simple, easy to use file encryption and decryption program. Select the Encrypt option and select the file to encrypt. You are then asked for a password. CEADEP supports encryption of multiple files and you can use wildcards to select particular files. A nice feature of this program is the Scrub option, which deletes a file and renders it unrecoverable by any method or program.



Key Codes v1.0

Key Codes is a small Freeware CPX program mainly for programmers. It displays the key scan code, the shift state and the key ASCII code when you type any key combination. The results are shown in hexadecimal, decimal and octal values. In addition the ASCII representation of the key combination is shown as well as the keyboard character itself.



XGrabber

XGrabber is a Freeware screen snapshot utility. "So what?", I hear you say. This one is different to the rest because it claims to be able to snap screens other grabbers can't. XGrabber lets you take screen shots of games and demos as painlessly as possible. It is controlled by the Jaguar Joypad, and will be of most use to journalists.



TONY v1.0

Freeware/All Ataris



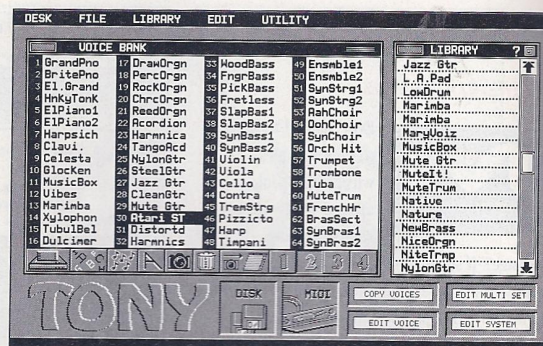
TONY is a fully featured editor and patch librarian for the Yamaha TG100 synthesiser. Up to four

banks can be held in memory at the same time, and it allows you to edit Voices, Multi Sets, Drumsets and System settings. Most parameters are represented graphically using faders, icons, envelopes, waveforms, etc. There are also two types of random



patch generators available which comes in handy if your creative juices are not flowing readily.

The librarian is where all your Voices



TONY gives you full control over your TG100 synthesiser

(optionally in different categories) are stored and the only limit to library size is available memory.

TONY runs on all Atari computers in high resolution, with at least one Mb of memory. If you get tired of editing, there's even a built-in Minesweeper game. CL



S3-ST v2.00

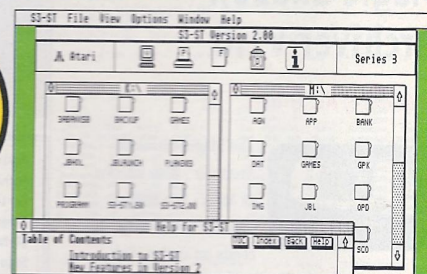
Freeware/All Ataris



S3-ST allows Atari computers with an S3-Link cable attached (even 512K

ones) running in high or medium resolution to communicate with the diminutive Psion 3a computer.

Using a GEM windowed desktop and icon laden toolbar S3-ST allows Atari owners to treat the Psion's file system like their own. Files and directories can be deleted, created, moved, and copied around the Psion or onto the ST. Backups, full or incremental, can be taken from the Psion and files can be viewed on the Atari monitor or even printed via a printer connected to the Atari.



The Atari and the Psion side by side

S3-ST even comes with an ST version of the Psion Data program which allows all the Psion database files to be viewed and updated on the Atari.

Easy to install and easy to use, S3-ST is an essential program for all Atarians who own a Psion 3A.

AR



Guitar Reference v1.0

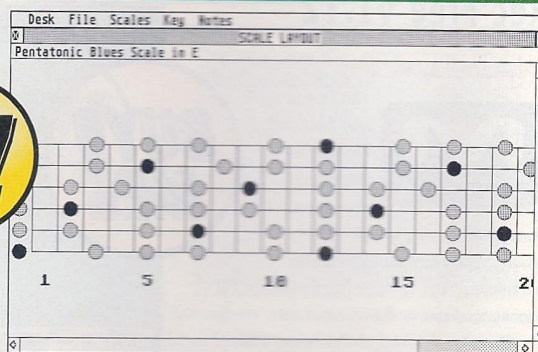
Freeware/All Ataris



This guitar scales program, once shareware, has now been re-released as freeware for the benefit of all Atari guitarists.

The program allows experimentation with over 55 supplied scales and 40 supplied tunings -but it's easy to add more. The scales are all transposable, and the resulting notes instantly visible on screen as text, circles, or squares. The display can vary from tiny to large, allowing the user to zoom in on detailed areas for practising purposes.

By single clicking on a note, the program will display the name which is very handy for



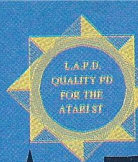
Root notes are shown in black on the fretboard screen display

learning your way around the guitar. The tuner provides the ability to hear notes via the sound chip or any attached midi instrument.

Guitar Reference is a capable GEM program and guitarists should check it out as a cheap method to spice up their practice sessions.

AR





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It's cold and wet outside but fear not, Nial Grimes is here with some public domain games that will warm the cockles of your heart. Open wide.

Brilliant Boffin Brothers

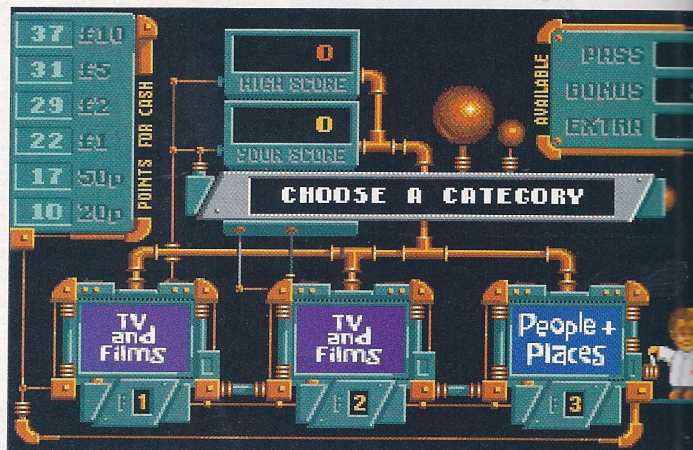


Goodman • £5.00 • Any ST

Brilliant Boffin Brothers is the Rolls Royce of quiz-'em-ups. Presented by the brothers themselves, this is one game with real personality and it's fun too, especially if you're a TP fan. Basically, you are looking at a pub quiz machine on your desktop – the guys throw a series of questions at you and it's your job to pick the right answer from the three displayed on screen. Naturally, there's a timer to keep you on your toes and one wrong answer is enough to lose the game! You will find a little help in the bonus system, which provides a number of passes, free answers and extra time tokens. Money is awarded for particularly high scores, but given the difficulty level of the questions you're gonna have to plug away for some time to win any virtual wonga!

Of course, this type of game can triumph or fail on the strength of its questions, and there are certainly no problems in this department. Three sets of three hundred or so questions are included on the disk covering topics such as films, music, science, people and pot luck (read, strange!). And if you manage to struggle your way through that little lot, you can retire to the editor program to create new sets – the editor looks every bit as good as the game itself.

And that's really what really places Boffin Brothers above the competition – the presentation gives a nice feeling to the play. Boffin number one pulls a lever to set the category wheels spinning, while sparks jump from the machinery in the background; Boffin two winds a lever to lower the category on the question screen. All of the graphics have a very clean and professional appearance and digitised sound is used throughout. The attention to detail turns what would be an acceptable quiz game into a very good one. It's just a pity you can't get a Baby Boomer edition!



Hmm – a few more Star Trek questions in the TV section wouldn't go amiss.



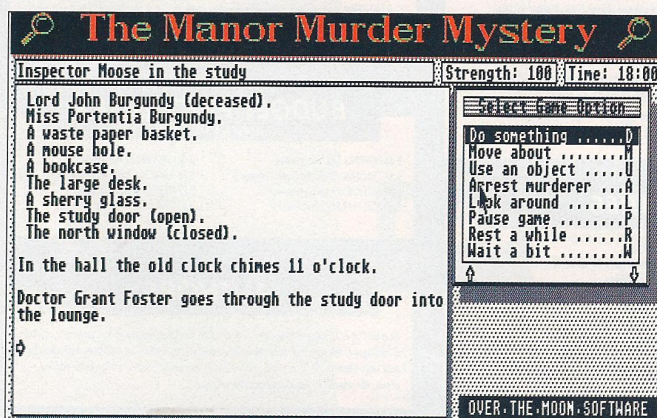
Passes and extra time tokens can be used to get you through tricky sections.



Ah, this is more my level! Any Andy Pandey questions?

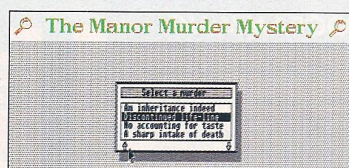


Extra questions can be added with the help of an editor program.



Mystery is a text only affair, but at least you can interrogate suspects without putting fingers to keyboard.

Four mysteries are included in the game, each one harder to solve than the last.



Mystery

Goodman • £1.95 • Any ST

Break out the monocle and dodgy Belgian accent – you are about to star in an Agatha Christie-style murder mystery! The game includes four scenarios to choose from and the aim is to question suspects, compare alibis and finally deduce who committed the crime; elementary, really. Each adventure begins with an introductory text to set the scene and then you are left to your own devices, free to wander from room to room, grilling or examining anybody or anything you see fit. The suspects will do the same, so often you will have to search out a particular person before the interrogation can begin – annoying, as this case needs to be cracked in a limited amount of time! Although there are no graphics as such, the text window keeps you well informed about what's going on in the manor, and all control is via the mouse. It's certainly worth a try if you're sick of Murder She Wrote repeats.



Nibe

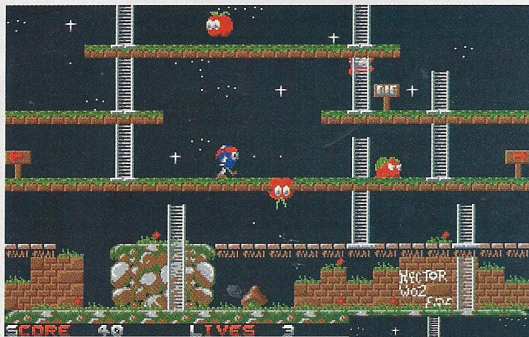
Goodman • £1.95 • Any ST

Nibe is far too playable to be healthy – in fact, it redefines the “just one more go” genre. At heart, it’s a SuperSnake clone, the idea being to guide a slithery reptile around the screen collecting apples and avoiding contact with the walls and an ever-lengthening tail. Of course, this would all be very straightforward, but for the fact that you can’t slow down or stop, and some of the pieces of fruit are in really tricky positions! But the nice thing is that no matter how badly you mess up, you remain completely convinced that you’ll crack the case and sure enough you do, around twenty attempts later! As if the gameplay were not enough, Nibe also looks nice too, with flashy demo effects putting in an appearance on the high score screen and main menu. And to round off the whole thing you’ve got some classic Mad Max tunes bopping along in the background. Now, just one more game and I’ll get on to the next review; well, maybe two.



The snake’s tail grows to ridiculous proportions as he gobbles fruit – getting the last few pieces can be real tough.

And if you thought the first level was hard, you ought to try some of these later levels; pump up those reflexes.



Trap the tomatoes and then fill the hole in – that’ll teach ‘em to invade earth!

Squashed tomatoes leave weapons and power-ups in their wake – go ahead pumpkin, make my day!



Hector

Floppyshop • £2.00 • Any ST

With a title like Hector vs The Mutant Vampire Tomatoes From Hell you’ve really got to expect weirdness and that’s something that this game does not fail to deliver. Platform action is the order of the day, but instead of chasing cute little monsters you’re after Mutant Vampire Tomatoes. Your sole aim is to flatten the poor little creatures and you can do that in a number of different ways, the primary one being to dig a hole in the ground and let the little blighters fall through. Dead tomatoes leave power-ups in their wake, so you can finish off the remaining mutants more easily. As one levels slips into another, the tomatoes become more aggressive and you need to drop them further to do any damage. It’s a nice blend of action with strategy and the graphics, although not outstanding by any means, complement the humour of the game nicely. Fun to play, fun to watch – Hector for president!

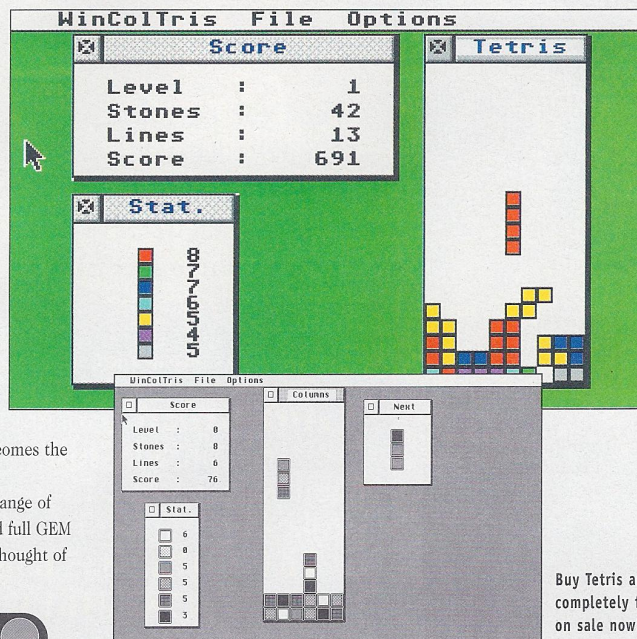


WinColTris

Floppyshop • £2.00 • Any ST

Okay, so you’re a Tetris fan, but you really can’t afford to reboot your machine every time you fancy a quick play, huh? In that case, you really want – or rather need – to take WinColTris for a test drive. This is quite simply the best GEM-legal Tetris clone on the market, featuring both classic and Columns gameplay. I am sure neither of these game styles need introduction, but for those who have been living on the planet Zargon for the past five years, the general idea is to fit shapes together as they fall down a chute – fill a horizontal line and it disappears. The game ends when the pieces reach the top of the window. Columns runs along similar lines, but colour matching becomes the main aim.

Although not startling in any way WinColTris provides a good range of features, including various skill levels and different tile designs, and full GEM compatibility, and it’s therefore ideal for those who can’t bear the thought of leaving their multi-tasking operating system.



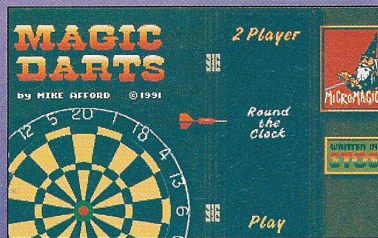
WinColTris works well in the GEM environment.

Buy Tetris and get Columns completely free – issue one on sale now!

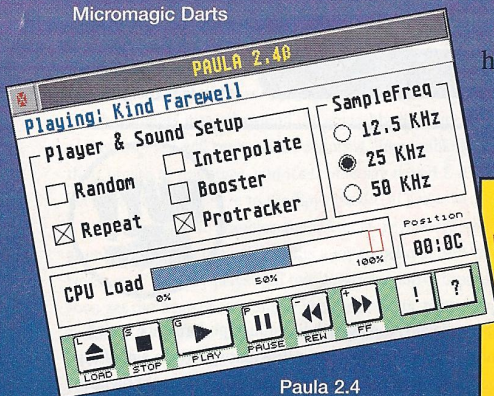


GOODMAN'S

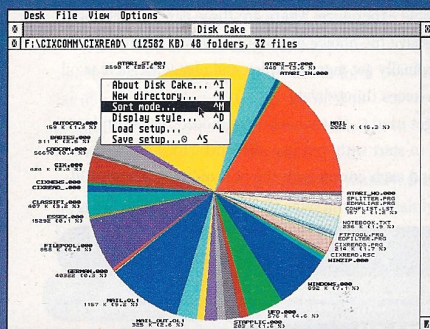
THE COMPLETE PUBLIC DOMAIN AND SHAREWARE SERVICE



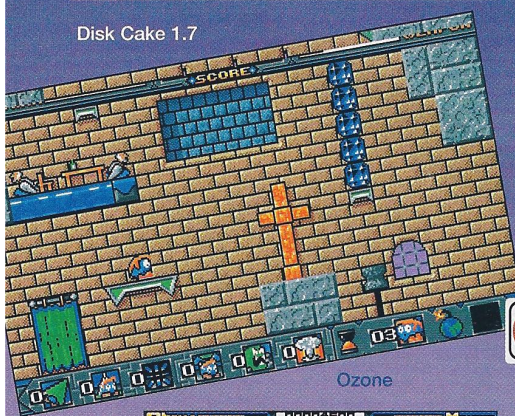
Micromagic Darts



Paula 2.4



Disk Cake 1.7



Ozone



Ozone

No matter how much coverage the ST Magazines give to Public Domain & Shareware, they only give you a sampler of the vast range available. As one of the longest established ST libraries in the World, we are constantly adding new titles to our, already extensive collection, so why not send today for our comprehensive PD & Shareware Guide, it's now approaching 260 pages, with good descriptions, screen shots, etc.

SHAREWARE GUIDE STILL ONLY £2.95

FREE DISK VOUCHER

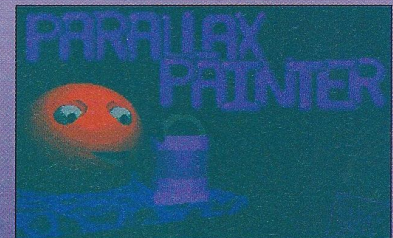
When you purchase Shareware Guide Redeemable when you purchase 5 disks or more *or* order any 5 disks and receive Shareware Guide FREE!



All Prices Include UK Carriage



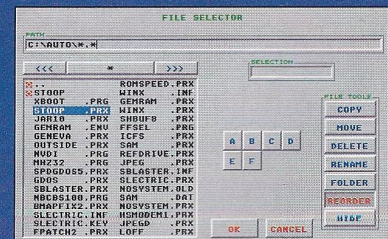
Goodman's (DEPT STW)
16 Conrad Close,
Meir Hay Estate, Longton,
Stoke-on-Trent. ST3 1SW.
TEL: 01782 335 650
FAX: 01782 316132



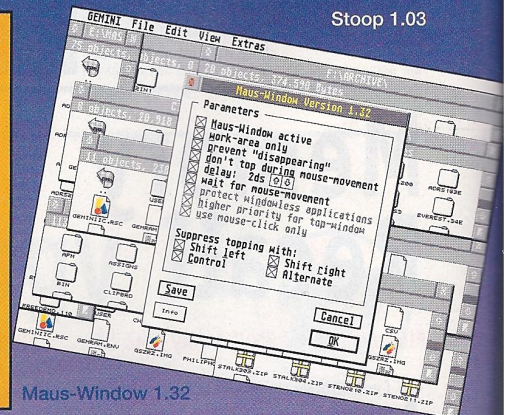
Parallax Painter



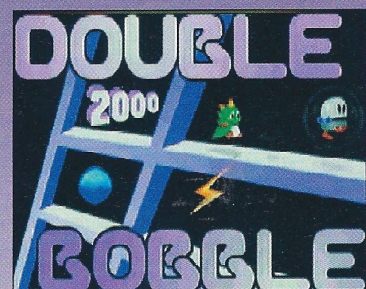
Easy Money



Stoop 1.03



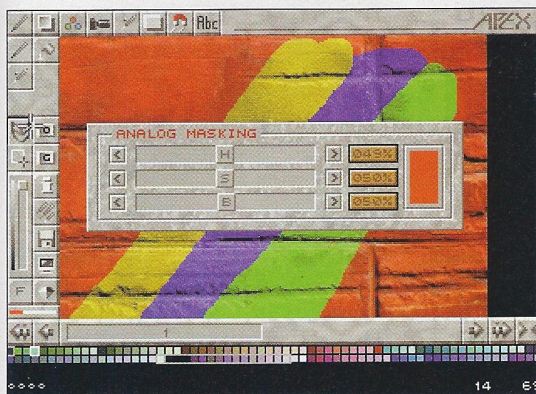
Maus-Window 1.32



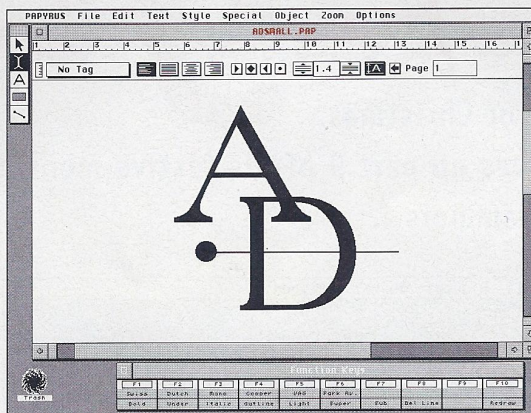
Double Bobble 2000

STranded

It's reader Neil Pool's turn this month - what will he take for his relaxing sojourn among the sun-drenched palm trees?



Well you must know what Apex looks like by now!



This is a screenshot from Papyrus with a simple logo I designed.

These are some graphics I designed for my Web pages at: <http://www-users.informatik.rwth-aachen.de/~neil/>

So I've been dumped on this little island in the sun. Luckily, a fellow Atarian has been here before me, and there's a nice little Falcon system set up under the relaxing shade of a palm tree. So which three programs would stop me clicking my heels together and saying "There's no place like home"?

A word processor is a necessity on any system, especially if you're a student with reports and projects to write up. Thankfully, the Atari is blessed with a rare gem - a word processor that has been really well thought out.

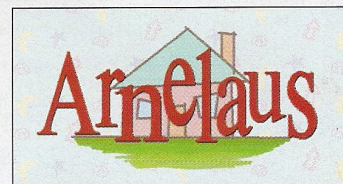
The first thing anybody will tell you about Papyrus is that it's "non-modal", and when you come to use the program you really do appreciate it. For instance, being able to alter the font of chunks of text without having to constantly exit and re-enter the Font Panel is a real boon. The interface is just so intuitive - I have never felt that it's standing in the way of what I'm doing. In a group project last year, our 140-page final report was formatted and printed on an Atari using Papyrus - including many diagrams, tables, and even a chapter written in a formal specification language called Z which uses a lot of symbols for set theory operations! There's really no better way to learn the intricacies of a program than to create a large piece of work on it.

Doodler

The second program I just couldn't do without would have to be Apex Media. You see, I'm a compulsive doodler (something brought on by attending one too many dull lectures no doubt) - and with Apex I can produce decent results, even though I have little in the way of artistic talent. Recently I've been messing about designing web pages, and Apex has been truly invaluable - all the graphics contained within them have been created using it. Also, the amount of fun you can have with the distortion tool is almost worth the asking price alone - I've already managed to offend several of my friends by cruelly exaggerating their facial features using this tool!

Apex's custom interface is in my opinion one of the best I have used. It really does bring all the power Apex has available to your fingertips. The fact that all operations are lightning fast, if not real-time, makes experimentation with your images extremely easy.

Even with a 4 Mb machine, you can get an awful lot done - though for seriously large images of animations you may need more memory. Incidentally, Papyrus works very well with Apex for designing things like logos. I often use Papyrus to get the text to look just how I want it, and grab the screen using something like Imagecopy. I then import the screen grab into Apex to add my



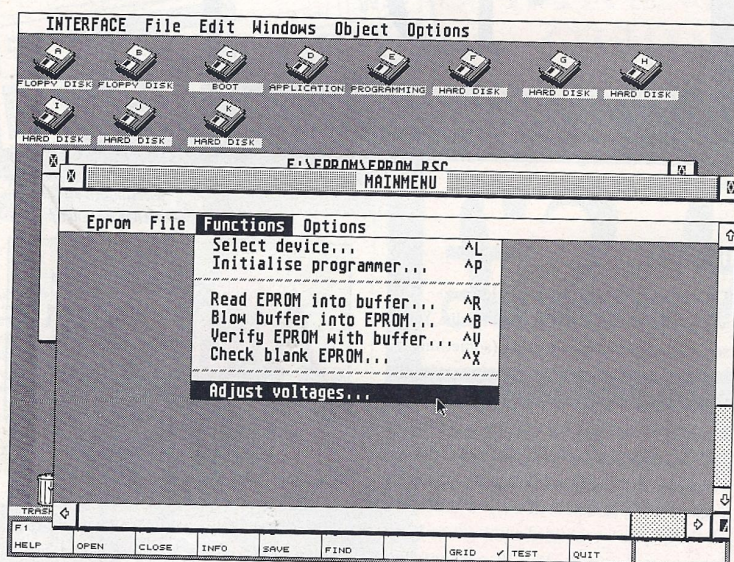
fancy textures, anti-alias the text and so on.

What would be my third and final choice? Well, being a student I have to relax sometimes (!) so my final pick would, of course, be a game of some type and for a mindless, all-out blast on the Falcon, you need to look no further than LlamaZap. It's weird, it's wacky, and it's wonderful. Incredibly varied, this game throws more game styles at you than you'd know what to do with, from the Defender-style main levels to the transition levels which are just plain odd. This game is as addictive as hell, I haven't a clue how much time I spent battling beasts of one kind or another when I really should have been revising. It's also extremely tough - I congratulate anybody who has got passed that second Gridrunner level.

Yes, LlamaZap would definitely have a place in my list of the 'elite three' programs to be stranded on a desert island with. Besides - If I crank the music up loud enough, perhaps a passing ship will hear me...

Never mind the language

Just in time for Christmas,
Jon Ellis serves up part 9 of his festive menu
for GEM programmers...



Resource editors make
menu bar construction
easy.

After the dialogue box, our next set-piece of GEM programming is the drop-down menu. These are extremely easy to work with because the system does most of the work for you.

The GEM menu bar is an object tree, just like a dialogue box, but with a special structure. Since the structure is critical to the correct functioning of the menu bar, all resource editors treat the construction of menu bars differently to that of a normal dialogue box. This enables them to ensure that the rules governing menu bar object trees are satisfied.

To use a menu bar in your program, start by initialising the menu system and displaying the bar. This is done using the AES `menu_bar()` function:

```
menu_bar(pointer, TRUE);
```

The same function, but with a FALSE second argument is used to erase the menu bar before a program terminates.

Once installed in this way, the interaction between the user and the menu bar is supervised by the AES screen manager. This

goes on in the background, without any intervention from the application. All your program needs to do is to wait for notification of a menu selection through the AES event system. In the simplest approach, you can just call `evnt_mesag()`, though the more complex but flexible `evnt_multi()` call is better, as it allows you to support keyboard short cuts (of which more next month).

A selection is signalled by the arrival of a event with the `MN_SELECTED` code in the first word. The fourth word of the message contains the object index of the menu item chosen by the user. The third word is the index of the title object of the relevant drop-down menu. In later versions of TOS that support submenus, other words are significant too. By analysing the message, your program should determine what the user wants to do, and call the relevant code.

When a menu option is selected, the AES displays the title of the menu in reverse video. It's up to the program to restore this to normal colours when the processing associated with the selection is done. This requires a quick call to the `menu_tnormal()` function. Once this is done, the program should return to waiting for another menu event.

Top tips

When designing your menu bar with a resource editor, it's worthwhile adhering to some general design conventions that keep the user interface consistent with other GEM applications:

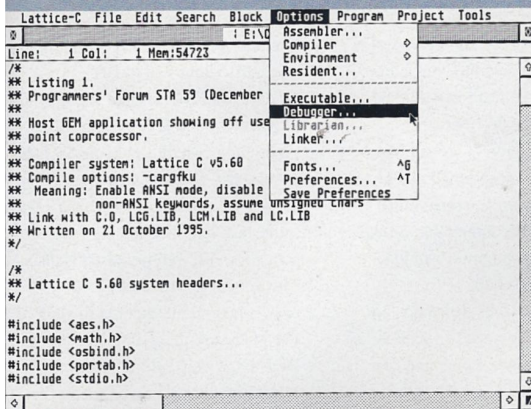
Menu titles (the headings visible before a menu is dropped) should be single words, in mixed case, not all capitals. In bars designed for 40 column screen modes, abbreviated titles can be used. Menu titles should be prefixed by a single space. The left-most menu title should normally be the program name (though 'Desk' or the Atari symbol are common in older programs).

Menu items (the contents of a drop down menu) should be `G_STRING` objects. Some other object types also work, though rarely look good. Items should be preceded by two spaces (to allow room for the tick displayed for CHECKED objects).

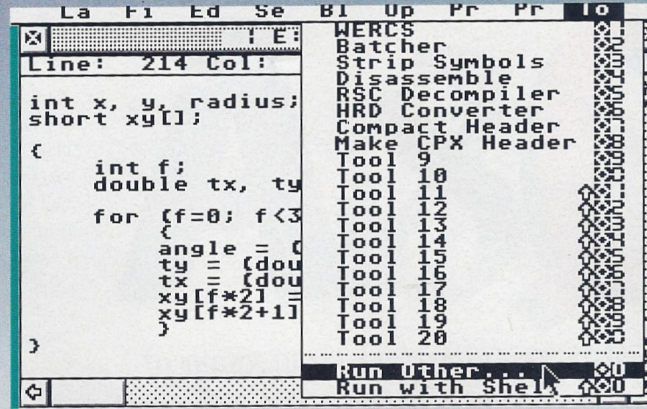
Separators can be used to subdivide sections within a drop-down menu. These normally consist of a full width string (no preceding spaces) of hyphens (-), with the `DISABLED` flag set. Most resource editors will detect such strings and automatically adjust the number of hyphens to fit the menu width.

Don't allow a drop-down menu to occupy more than one quarter of the screen area, as certain versions of the AES may crash when such a menu is displayed. This is most relevant when programming for low resolution (40 column) screen modes.

Next month's article will feature some example code for menu handling, along with some tips on keyboard shortcuts.



Well-designed menu bars make even complex programs easy to use.



Low resolution screen modes make big menu bars difficult.

Advanced Tech Tips: Dialogue processing

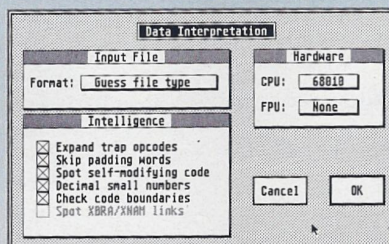
Here's a tip which might interest some of the more experienced programmers. Large GEM programs often contain a number of functions that support the display and analysis of dialogue boxes. These are usually somewhat similar, differing only in the initialisation and analysis of user-modifiable objects in the dialogue.

The idea is to replace all these individual dialogue processing functions with a generic routine that handles all boxes. It also takes on the task of keeping program variables and dialogue box elements linked and up to date with each other.

This is done using the DIALOGUE structure detailed in the listing below. In this structure is collected together all the information associated with a dialogue box. In order of appearance, the fields contain a pointer to the object tree that is the dialogue box and a structure containing information that allows rapid drawing and erasing of dialogues by blitting. The next three elements are pointers to structures which link objects within the box to an associated program variable. Each structure deals with a different type of variable: selectable button, text field or pop-up menu; and lists the index of an object and a pointer to the associated variable.

The following three fields contain the indices for the Cancel and OK buttons of the box and for the current editable text object. Finally, there are three elements that provide pointers to functions to cope with unusual objects or animation requirements.

To take input via a dialogue box, the main program simply calls `handle_dialogue()` with a pointer to a correctly initialised DIALOGUE. When the function returns, the user interaction is over, and program variables associated with the box have been updated. `handle_dialogue()`, DIALOGUE structures and supporting functions can all be placed in a single program module, keeping the top level program structure neat, clean and easy to maintain.



Even complex dialogues can be processed by a generic handler.

```
typedef struct dial {
    OBJECT *tree;
    /* Pointer to dialogue picture */
    BLIT_INFO blit;
    /* Blit information */
    INIT_BUTTON *buttons;
    /* Pointer to buttons to fix */
    INIT_TEXT *text;
    /* Pointer to text fields */
    INIT_MENU *menus;
    /* Pointer to popup menu fields */
    int cancel;
    /* Index of cancel button */
    int ok;
    /* Index of OK button */
    int edit;
    /* Index of current edit object */
    int (* animator)();
    /* Special animation function */
    void (* setup)(struct
    dial *); /* Special setup fn */
    void (* read)(struct
    dial *); /* Special analysis fn */
    DIALOGUE;
    /*
    ** Function to perform generic dialogue
    box handling.
    ** This includes setting of box state
    from variables,
    ** display, user management, assimilation
    of results
    ** if necessary etc. All these functions
    are directed
    ** by the DIALOGUE structure that forms
    the argument
    ** The function returns the index of the
    object used
    ** to exit, or 0 on some catastrophic
    error.
    **

```

```

** Usage:  index =
handle_dialogue(table);
**
**          int index,
handle_dialogue(DIALOGUE *);
*/

int handle_dialogue(box)
DIALOGUE *box;
{
    int exit_object;
    BLIT_INFO *use_blit;

    if (box == NULL || box->tree ==
    NULL)
        internal_error(INTERNAL_NULL_POINTER,hand
        le_dialogue);
    if (box->buttons != NULL)
        set_buttons(box->tree,box-
        >buttons);
    if (box->menus != NULL)
        set_menus(box->tree,box->menus);
    if (box->text != NULL)
        init_fields(box->tree,box->text);
    if (box->setup != NULL)
        (* box->setup)(box);
    use_blit = (blit_dialogues == TRUE) ?
    &box->blit : NULL;
    exit_object =
    display_dialogue(box,box-
    >tree,use_blit,&box->edit,box->animator);
    if ((exit_object & 0x7FFF) != box-
    >cancel)
    {
        if (box->read != NULL)
            (* box->read)(box);
        if (box->text != NULL)
            read_fields(box->tree,box-
            >text);
        if (box->menus != NULL)
            read_menus(box->tree,box-
            >menus);
        if (box->buttons != NULL)
            read_buttons(box->tree,box-
            >buttons);
    }
    return(exit_object);
}

```



Q&A

You send in the questions - our team of experts sets about solving them...

Games, games



Q We have a 520ST that has just been used for playing

games. My son has just started his GCSEs. Can he use his ST for his course work or do we need to buy him

a new computer. We can't afford to spend more than about £500 - is it worth spending that much on our ageing Atari?

F L Bright, Sunderland

A Easy! £500 would be a total waste on a 'new' computer. £500 would buy you a 'new' PC but the specification would be so poor you would be buying obsolescence. Buying second hand you would be exceptionally lucky to find anything in your price range worth paying the money for. So the trusted games computer will have to come to the rescue!

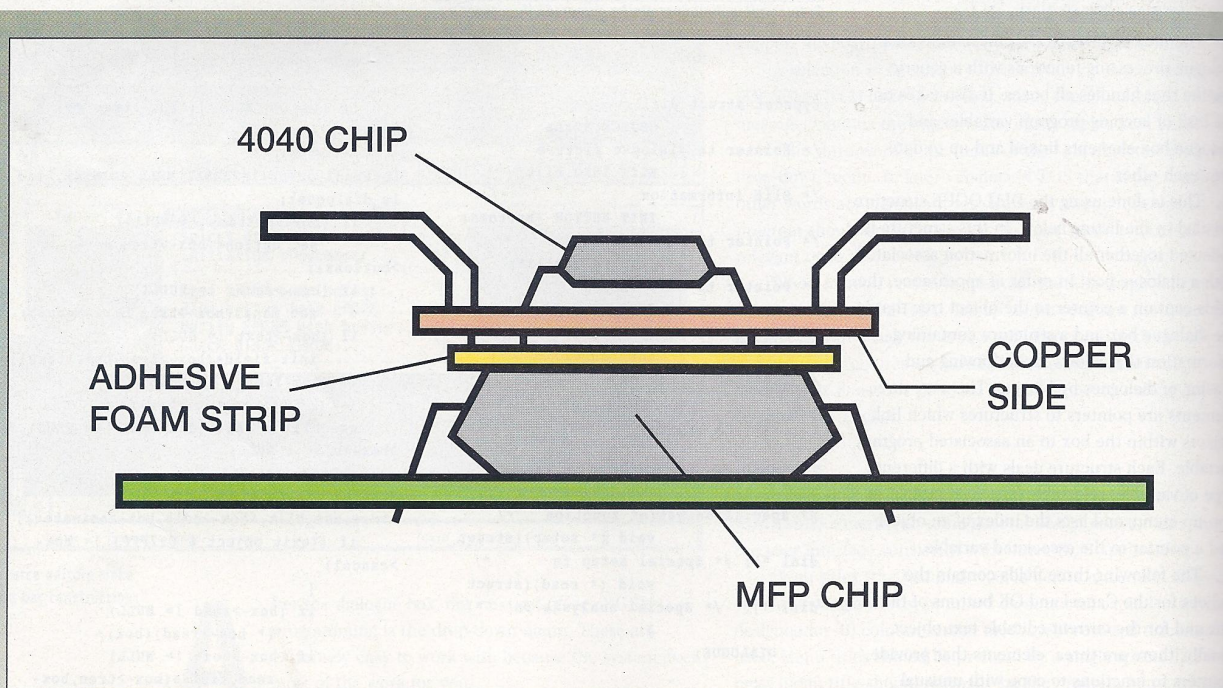
Is it up to it. Yes definitely, but you are going to need to spend at least some of that £500. I presume that the ST is plugged into the TV and that you have no printer. I also assume that your 520 is as purchased, ie you have never upgraded the memory.

The first thing you need to do is to upgrade the memory. A 520 has half a megabyte of memory inside it. To use it for anything more than playing games you need a minimum of 1MB. You don't say if it is an ST FM or STe. (It says on the front of the computer in small letters after the words 520

ST). If it is a 520 STe the memory upgrade is normally a very simple job and costs about £10 to DIY.

If it is an ST FM then the upgrade kit costs around £35. Fitting this is often quite easy but in some ST FM require use of a soldering iron. If this is the case the soldering job is usually quite easy but occasionally requires someone with well practised skills. The difficult part is to find out how easy it is to fit an upgrade to your ST FM (there are many different kinds of ST FM and you can't tell from the serial number). I'd recommend that you buy an upgrade and have a go. You can't do too much damage to your ST FM if you are careful so it's not going to cost you to try. Budget an extra £40 - £50 to get it fitted by an Atari Professional such as Paul Rossiter in Nottingham on 0115 966 1870. (Paul writes our Inside the ST series).

The next thing you're going to need is some software. Here you should



Serial port

With regard to the serial port accelerator feature in issue 6, can I suggest the following tips to make life a bit easier:

- 1) When you come to cut the tracks with a sharp knife, DONT! It's difficult, messy and dangerous. Try using a 4-8mm (sharp) drill bit, twisting the tip in the holes where you want the track cut. This sounds strange, but the proper tool to do this is in essence a drill bit with a handle.
- 2) Rather than using single core wire (which is notoriously brittle), try to use multistrand - it's also a lot easier to strip with side cutters.
- 3) Insulating tape on the underside of soldered strip board can tear - double sided adhesive foam strips will insulate them better, you can get them anywhere.
- 4) And finally, the picture of the completed circuit is shown to have the IC on the same side as the copper tracks. It's a lot neater if the wire penetrates from the plain side and is soldered on the opposite side (see diagram).
- 5) Also note it is much easier to destroy an IC thermally than it is to electrostatically destroy it ('HC' chips (High power CMOS) have protection diodes connected to the legs to help prevent burn-outs). So easy on the soldering irons!

S J Lawson, Cumbria

start with some low cost items and then progress to some commercial software when you have some experience. There is an excellent collection of PD and Shareware sold by Goodmans PD for £14.99 specifically put together for GCSE pupils. Apart from that check out Timeworks Publisher on our reader disk 4 and Kandinsky on reader disk 7 as excellent DTP and drawing programs. With this lot you will have got an excellent set of software for under £30 that will transform the use of your ST.

Next on the list is a printer. This is something I would buy new and not second hand. At a little over £100 you can get an Epson LQ100 (not LX100) which is an excellent dot matrix printer and very compatible with Atari software. Dot matrix printers are a little old fashioned these days - they are slow and noisy but with a decent ribbon you get excellent print quality.

The next step up is an inkjet printer. The print quality is excellent and ink jet printers are ideal for home use. A black and white inkjet printer will set you back just over £200. I'm a fan of Hewlett Packard Deskjet printers but Canon are also strong in this market. Colour inkjets cost nearer £300 and again I'd stick to HP or possibly Canon. If you go down the colour route you are also going to need a copy of Imagecopy from FaST Club to make the most of colour printing.

Normally I'd recommend buying anything for your ST from an Atari specialist dealer - they are the ones that will help you out when you can't get a particular widget to work. However if I was buying a printer I'd check out the local high street shops to see them in action - then buy a copy of Computer Shopper magazine and buy the cheapest example of the printer I wanted from there. Remember to count the cost of carriage, VAT and cables when comparing prices. (The ST uses the same printers and the same printer cable as a standard PC so you can't go wrong!) Remember when your son has finished is GCSEs and A-Levels and has gone on to read Quantum Physics at Oxford; purchased a multi processor Pentium based PC with 64Mb of RAM he will still be able to plug in the printer you buy him now and get excellent results!

The last essential item on your list is a monitor. Depending on how much you spend on your printer will depend what's left over for a monitor. Nothing less than a high res black and white monitor will do. I'm afraid the quality

you can get from an ST in colour is quite poor without a graphics card (see the roundup of graphics cards in this issue of Atari World). A new one will cost a little over £100. If you can find one second hand at the right price go for it. A monitor either works in ST high resolution or it does not. If a monitor works continuously for about three hours with no problems then it will probably outlast your ST. An Atari SM124 or SM125 are very safe purchases. With an SM144 or SM146 check the focus of the screen carefully. Also when buying second hand check a monitor for screen burn. Screen burn occurs when a monitor has been left on with the same picture on screen for long periods of time. The picture etches itself onto the screen and causes an annoying ghost image overlayed onto all your work.

Otherwise the new VGA type monitors sold by companies such as Ladbroke, TUS, System Solutions or COMPO work well at around £100. Monitors are something you should only buy new from an Atari specialist or second hand from an Atari user unless you really know your sync rates and frequencies. 99% of all monitors ever manufactured can't be used with a 'normal' ST!

Shifting from 'essential items' the only other major purchase left is more disk drive capacity. A second floppy disk drive is a nice to have extra but the price new - compared to a hard drive - just about rules them out. If you see one second hand for under about £30 that works (or under £40 if it is made by Cumana) then grasp the opportunity. Otherwise check out our hard drive feature in this issue to whet your appetite and get on saving!

All this new kit is going to work wonders on your Atari. What's more the bigger purchases - the printer and perhaps the hard disk are portable between computers. However over the two years that your son is doing his GCSEs some software component is not going to be up to the job - you only spent £30 on this component remember. When you hit the rails next it will be because of software so start saving and seek professional advice from software companies such as COMPO, HiSoft, Systems Solutions and Titan (in alphabetic order) for your next set of commercial alternatives.

Maurice Collins

Networks



Q As the owner of a 520 STFM and a

1040 Ste it is possible to connect them as a network in conjunction with a packet radio setup if I used my STFM as the Packet terminal (ie would they require the same RS232 socket?). Thanks in advance for any advice given and keep up the good work!

Mr G Dunne

A No. Networking and STs is an expensive mistake rarely known to deliver useful results.

Maurice Collins

Desktop delight



Q I am writing to you with just a few questions and

queries which I could really do with answering. I have recently purchased a 540MB hard drive from Gasteiner and I am very pleased with it so far. My desktop is now very nice - thanks goes to Teradesk - and has lots of things on it. However, I have recently read one of your magazines which talks about backing up. but, it doesn't exactly tell you how to back up your hard drive and I am very worried that if something goes wrong with it then I would lose everything. Please could you help me with this.

I was also wondering if it is possible to have a review of a Towercase. I for one would love for my ST to say goodbye to that horrible old case and look like it's a flashy expensive PC thing. I have never seen a review of one of these although I've heard System Solutions do an excellent selection.

Why don't you tell us a bit about yourself. For example - do you have an ST (if no, then why not!)? What do you like doing? Just have a chat with your readers in your small column (and make it a large column!)

I would appreciate it greatly if you could help me as I am just 15 years old - I do love my ST to bits - and am not the brightest person in the world. If you can't help me then that's fine - don't worry about it. But if you can, then that would be great.

Finally, what is a partition? Is it a folder ie games folder, DTP folder etc? I'm a little confused.

PS Sorry about the sad dot-matrix - worn out - printer. But it's all I can afford.

Lloyd Hannis

A Backing up is easy and cheap - you buy a copy of Diamond Back from HiSoft and lots of floppy disks. More expensive is one of those neat new Syquest 135's. I think a new printer is a higher priority on your budget though.

As for a Towercase - we have already spent your budget - the cost of a tower case will make you hyperventilate! However I do think your idea of a towercase roundup is a good one.

Yes, I have an ST, PC and Mac. But I'm more interested in solving your problems than wittering on about my self. To be honest, I'm not that interesting... I'll leave that stuff to Princess Di - she's better at it than I am. Read our hard drive article in this issue. If you don't understand a partition by then the authors are in for a thousand lashes!

Andrew Wright

All change



Q I own a Falcon 4mb on which I run Calamus SL,

until recently I owned a Deskjet 500 which worked very well but I fancied like a change of printers so I bought a Deskjet 660C. It is a very good printer but I have a problem. It refuses to print on the bottom 2 inches of the page. My old Deskjet could print further down than this so why won't this one. I have tried all the Deskjet drivers that I have. Any ideas?

Rob Gascoigne

A I think this could be a switch setting on you Deskjet.

The first thing to do is to eliminate the uncertainty about the printer drivers. From the desktop double click on an ASCII file that is longer than a normal A4 page. When you get the message Show Print or Cancel select Print. This will then print on your Deskjet - no printer driver is required to print ASCII text in the printers default font.

If the print runs to the bottom of the page then the problem is the printer driver. If as I suspect the printout stops in the same place that it does when printing from Calamus

then the problem is with your dip switch settings on the printer. I suspect you have the page length set wrongly to 11".

Maurice Collins

Sing out



Q I am looking for help and advice on the following. I am a member

of the local choir. I wonder if I can purchase a midi program which would allow me to:

1. Use a hand scanner or page scanner to import 4 part music (sabb)
2. Highlight an individual line, say tenor and play this on its own.

I have an STFM and an STe, and I am buying a midi keyboard. I would like to know what software package, if any would be able to do this. If I cannot do this with either of these machines, would a Falcon be able to do it.

Please advise on the various parts needed to achieve this, any any programs you would recommend.

T J J Brown.

A Scanners are not going to solve your problems. You are either going to have to play the music via your keyboard into an ST or type it in by hand. You can get Pro 24 from COMPO at £14.99.

Maurice Collins

Gulp



Q Many thanks for answering my question in

Issue 6. It was not my intention to make you gulp or apologise and I am sure that you are not incompetent. Your answer did make me think, and hence produced another question which I hope you will allow. If it is disk space I need, then could I in some way use a ram disk when installing and thus reduce the amount of disk swapping and hopefully obtain a few more fonts?

If this is possible then perhaps you would kindly give me brief instructions, as I am fairly new to computing, and this is not easy for me to work out for myself.

T J J Brown

A That's a remarkably intelligent question from someone who professes to be 'fairly new' to computing. The answer is yes and no - yes you can use a RAM disk to enable you to use more fonts; but no I can't give you brief instructions, it's not that simple. I think we need to do you a step by step guide for this so look out in either Issue 10 or 11.

Andrew Wright

Conundrum?



Q Please could you help me with a conundrum

that has occurred through the reading of your magazine. The setup that I use is as follows:

Atari STE 1040 (upgraded to 4Meg)
Microvitec 1438 multisync monitor
System Solutions Mini S 170Mb Hard drive
HP Deskjet 540 with colour kit
On this I have been running
Timeworks 2, Imagecopy 3.5,
Hyperpaint and a few other programs.

As the printer is so new I wanted to get the best I could from it, ie use its built in fonts and also take advantage of the ability to use vector fonts as there are so many on the market.

At the same time I could do with a software screen accelerator. So, why not combine the two and purchase NVDI 3, particularly as Jon Ellis had recommended this very upgrade to Chris Miles in issue 1 of your fine magazine. How could I go wrong?

System Solutions were furnished with the details of my credit card and in a flash (not literally) I was installing NVDI into my boot up drive. Imagine my dismay when I found that I could not get Timeworks 2 to run, whether NVDI 3 was installed or not. In fact, I had to remove NVDI 3 and completely re-install Timeworks 2 - a very frustrating afternoon! What I could not understand was why this happened, especially as Chris Miles had said in this letter that he was running Timeworks 2 on his system when Jon Ellis recommended that he purchased NVDI 3. A swift phone call to System Solutions confirmed my fears - NVDI 3 was not compatible with Timeworks 2 as TW2 does not use true GDOS fonts. Perhaps I'll have to get a new DTP/Wordprocessor instead.

Hang on though! What's this in Issue 4? Timeworks 2.04 with vector support via SpeedoGDOS 4. Ah! but it

will only run with SpeedoGDOS 4 - I know that because it says so in the article and is only offered for sale with it in the advert. It also says that in the article in Issue 5, quite emphatically. Wait though, what's that in the advertisement on p49 - "There are two versions of SPEEDO GDOS that work with Timeworks 2.04, SPEEDO 4.2 and 5."?

Gunter Minnerup claims on p47 that this is not so. Which is the case, as Timeworks 2.04 may be the answer to my problem (NVDI 3 and SpeedoGDOS 5 being compatible)?

Also, am I correct in thinking that I can upgrade the memory on my father's STFM with standard SIMMs modules, it having already been upgraded from 0.5MB to 1MB, presumably with Marpet Xtra Ram or something similar.

Kevin C Miller

A Last things first; yes you just need some 1Mb SIMMs to add to the memory board in your father's machine if it is a standard Marpet Xtra Ram Deluxe board. You can tell by looking at it - the Xtra RAM board has 4 SIMM sockets; in your Father's case it would be populated with two 1/4 MB SIMMs which makes the 1/2MB upgrade. These need replacing with 1MB SIMMs to upgrade either to 2 or 4MB. If the memory board does not have SIMMs then it could either be an 'old' Marpet Extra Ram or some other brand if upgrade. An old Xtra RAM would have 16 chips in sockets to populate it to 1/2 MB. These can be upgraded to 2MB but far better (and probably cheaper) would be to replace the board with an Xtra Ram Deluxe.

Now to Timeworks and NVDI 3. You have Timeworks 2.00, 2.00a or 2.01. This version of Timeworks will only work if GDOS is active on your system. It does not support scalable fonts so you can't use SPEEDO or NVDI 3 to give scalable fonts. NVDI 3 has two basic functions; one as an accelerator, the other as a font scaler. You can use NVDI 3 as an accelerator with your version of Timeworks but not as a font scaler.

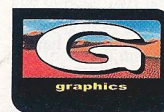
When you installed NVDI 3 then you knocked out your old ASSIGN.SYS file - the one GDOS used - and created a new one for NVDI. Hence Timeworks stopped working. There is an option on NVDI 3 in the configuration CPX to switch off the font scaling part of NVDI 3. With this switched off your Timeworks will run as previous only faster.

Finally, you do have the option of

upgrading to the Atari World special release of Timeworks v2.04. This version supports scalable fonts using any version of SPEEDO or NVDI 3. This I think is your solution.

Maurice Collins

Timeworks tangle



Q I am writing to you about a major problem I have

with installing Timeworks 2.04. I bought Timeworks 2.04 and SpeedoGDOS 4.2 and Font PackGold through an offer in Atari World (Your ref A1081).

The problem is a printer driver called LQ 570.SYS. I got SpeedoGDOS 4.2 up and running very fine, then it's time to run Fontwid.app, it loads and processes screenwids without any problems but when its going to load the printer drive I got 2 bombs on the screen and the program quits and return to the desktop.

I have tested the other printer drivers with Fontwid.app and there is no problem with them except LQ 570.SYS. And I have checked and tested the assign.sys and the extend.sys files and there is nothing wrong with them. I suspect something is wrong with the file LQ 570.SYS. The reason that I want just this file to work is that I own a Canon Bubblejet printer (BJ-200) and use it in Epson LQ mode at 360 dpi.

I'm very familiar with Timeworks (v2.01) as I use it nearly every day, so I know it's installation procedure very well. It's the original that I bought directly from GST through an offer that was made in ST Review (issue 20 back in 1993).

The computer I have is a 520 STE with 4MB and TOS 2.06 so it's not lacking out of memory. I have been testing different setups with LQ570.SYS for almost a week now and nothing works. So I hope you can help me solve the problem before I'm going nuts.

Lars Tegelgand

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A Quite simply the LQ570.SYS driver does not work. Use the STAR NB24-15 driver and your problems will go away.

Andrew Wright

Techy alert



Q I need some advice. Could you possibly help?

I intend to replace one of my computers in the new year and would like to run software like Cubase Audio 16, 4TFX, Apex Media, Chagall, Calamus SL and Neon 3D but I can't decide between an upgrade Falcon or a second hand Mac and MagicMac.

In ST User #105 there's a feature on Werner Freys power Falcon which mentions a "zero Ram wait state", a 33Mhz FPU and the "Afterburner" 040 accelerator. I've also heard of a 40Mhz accelerator, the "Barracuda" 040 accelerator, and some hardware to give a full 32-bit bus.

Would it be possible for you to do a feature on all Falcon hardware upgrades for the CPU and FPU (and their specs) currently available or available soon. Also, as the PAK 68/3 can upgrade an ST up to a 50Mhz 030 and FPU with a 32-bit bus, could it be modified for the Falcon using its own CPU/FPU?

I like the audio and graphical capabilities of the Falcon. At work we have a couple of LCs and a Quadra. I own a 4MB STE and hope to be getting another one if a few weeks. I'd like to stick with Atari if its powerful enough and economically viable.

Well that's it, thanks for your help in advance. Cheers!

Mahn Davis

A A MAC running MagicMAC is basically an accelerated ST albeit blindingly fast - it is not a Falcon. A Falcon is a multi processor computer having two key chips to power it - a Motorola 68030 and a DSP. It is the combination of the two that makes the Falcon such an exciting proposition and why programs like CuBase Audio and Apex can perform so well. They both harness the power of these two chips to produce such blinding performance - neither will run on MagicMAC - no DSP.

Your option is therefore to either by a Falcon or give up on APEX, use the Mac version of Cubase Audio and use MagicMAC for the rest of your

software. This is going to be a very expensive option - much more than even a new C-Lab Falcon. I doubt very much if you will find a suitable MAC to run CuBase second hand - expect a suitable working MAC setup to cost well over £3,000.

As far as accelerating a Falcon is concerned you can be sure that we will be the first to review anything new that becomes commercially available - as opposed to a rumour. We believe that Compo Software will be demonstrating something at the Atari World Christmas Shows - more news if they do next month.

Maurice Collins

Fontwid

Q Recently, I ordered the Reader Disk Issue 4 which came with Timeworks 2. I had successfully installed onto my hard drive. I then re-boot and run FONT_WID program. In the middle of the process, an error message "Exception Error - Divide By Zero Reboot" came up. I ignored the message and clicked on the CONT button. The program continued running but the error message kept coming back occasionally. Finally, after several tries, the Font program successfully loaded. I was able to run Timeworks 2. Then when came to printing, the error message appeared again during building up Fonts and Drivers. Please advise what is the cause and how to solve it?

After Timeworks 2 was installed on my E partition, I couldn't properly run my Calligrapher (on D partition) when I disable GDOS.PRg and re-boot. Please help.

B Tee

A The FONT_WID program does not normally do this! I suspect that some other program is interfering here. Get rid of every auto folder program except GDOS, remove every desk accessory. And try again.

If that does not work then trash your DESKTOP.INF or NEWDESK.INF file, reboot your computer, recreate your desktop and then do a SAVE DESKTOP. Try FONT_WID again. If that still does not work then trash your Timeworks installation and re-install.

Maurice Collins

Easy Text



Q I have today received my copy of Timeworks

2.04, ordered following receipt of issue 6 of Atari World. I ordered this as the advert in the above issue stated that it would work with NVDI 3, which I currently use in conjunction with EasyText Professional Vector without any problems.

However, upon following the instructions on the Read Me text supplied, I have run into a problem that I do not know how to solve. Upon running the FONTWID.APP, I get an alert box on the screen stating that the program cannot run in a low resolution screen mode. I am unable to understand why this is happening as I was running the application in Medium Resolution. (this also happened in High Resolution mode when using SEBRA to emulate this).

I use a 4Meg STE, with a hard drive, and colour TV as a display, and was drawn to this version of Timeworks as I find Timeworks easier to use than EZText Vector, which I use to produce a monthly Church Newsletter.

I enclose copies of the Assign.sys files, and the Gemsys folder. I would be pleased if you could tell me how to get the program to run properly, or tell me where I m going wrong.

Steven Ripper

A I suspect you are booting the computer in low resolution and then changing to medium resolution from the desktop. NVDI is therefore configuring itself to run in low resolution and this is confusing FONTWID. To cure this switch your ST into Medium resolution and do a SAVE DESKTOP. FONTWID should now run fine.

Otherwise I think this could be to do with the order of the files in your AUTO folder. The NVDI 3 manual states that it should run first in the AUTO folder. This is not necessarily

the case. If you have a boot manager this should always be the first program in your AUTO folder. Then if you are using something like SEBRA this should be next. Otherwise NVDI will be configured to run at the resolution specified in your DESKTOP.INF file - not in High resolution.

If this does not work then take the same prescription as the previous questioner!

Send us your questions

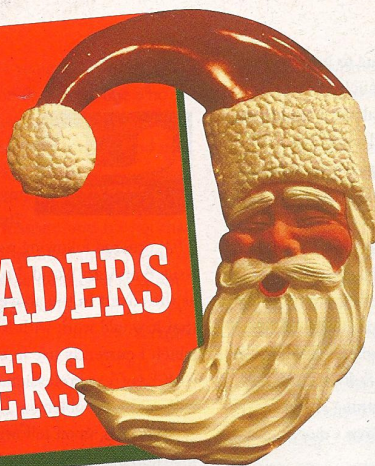
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22-23

87

34, 76

45, 48, 51

42, 99

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Colour reproduction by Meridian House plc
Tel: 01733 312313

Printed by Goodhead Heatset
Tel: 01869 253322

World-wide distribution by SM Distribution
Tel: 0181 677 8111; Fax: 0181 664 6216

Atari World is published by Specialist
Magazines Ltd (Registered office: Salisbury
House, Station Road, Cambridge CB1 2LA)

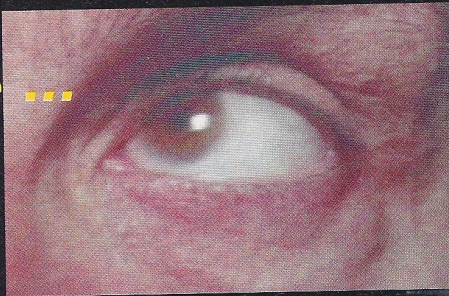
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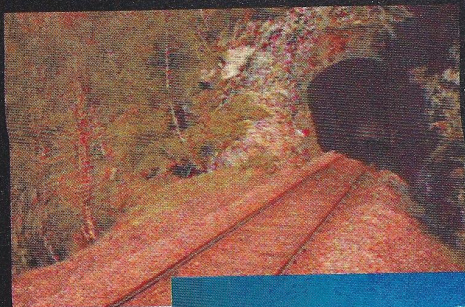


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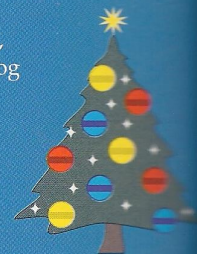
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